CDPC235

Subject
2 BD BOARDS USED, ONLY 1 PART # LISTED IN MANUAL

SYMPTOMS

Only one (1) board listed. This board comes with 8-752-360-75 IC used with KSS-390 optical pickup. No board listed that comes with 8-752-351-94 IC used with the KSS-240A optical pickup....Please advise if we have to change the IC or if another part # is available.

RESOLUTION

4/29/94; As per KCP the part number for the board using the KSS-240A pickup is A4649433A, this number is registered with KCP.

A4649610A **157** **BD BOARD**

CDPC235

Subject
AFTER PLAYING A FEW SELECTIONS STARTS SKIPPING - REPL OPTICS

SYMPTOMS

After playing a few selections, the unit starts skipping.

RESOLUTION

Replaced optical device.

884828111 **151** **KSS390A**

CDPC235

Subject
AFTER WARM UP, DISPLAY BLINKS AND STOP PLAYING

SYMPTOMS

After unit warmed up, display blinks and stop playing during track change and look for another disc. After intensive trouble shooting, we found a defective diode in positive 9.5V supply. If 9.5V supply drops to below 6.8V, unit will reset. We think, diode is not big enough to handle heavy loads.

RESOLUTION

We recieved Suto's information that samples are on the way. We will wait for the samples and look into this situation at that time. Update 9/21/94: The Samples have not yet arrived, since this is the only report of this type of problem regarding the CPDC235 we will close this issue, We will however, watch for further reports.

871920082	**D201**	**B21/DIODE 11ES2**

CDPC235

Subject
BU UNIT HITS DISC TABLE WHEN CHUCKING

SYMPTOMS

On 2 different units the laser hits the disc table when chucking. It appears disc table, ref# 59, is stopping too far clockwise. The pin on ref# 123 is against the left side of the slot in ref# 59. Is there any adjustment? What makes the table stop in this particular place?

RESOLUTION

(Feb 5) Replacing R458 with a 3K, 1/6 W (P/N 124784200) and R457 with a 5.6k, 1/6 W (P/N 12784900) repaired a unit sent to Tech. department. R459 is a 2.1k and was already installed on the unit worked on at Tech Dept. Positive feedback from Boston and Atlanta. -UPDATE: From Tokyo: 4/11, Replace IC401 with p/n 875284942, verify R457 - 2.4 k ohm, R458 - 750 ohm, R459 - 1.2k ohm resistor p/n's listed in S/M.

CDPC235

Subject
DEAD UNIT - POWER TRANFORMER OPENED

SYMPTOMS

Checked and found open primary (thermal fuse) in power transformer. Noticed that Q504 and Q502 had overdissipated. Checked both transistors and found shorted collector/emitters on both. Replaced Q502, Q503 and Q504. Then found that IC501 pins 13 and 19 were at -1vdc and +1vdc.

RESOLUTION

Replaced power transformer Q502, Q503, Q504 and IC501. Normal operation restored.

142355311	**T901**	**POWER TRANSFORMER**

CDPC235 Subject **DISC TRAY, ROTATES CONTINUOUSLY (REPLACE D801)**

SYMPTOMS

At power on disc tray would spin and not stop. Other functions were normal (open/close).

RESOLUTION

By checking D801 connector @ main board, voltages were correct but, pin 5 (T. Sens) data looked bad. Replaced D801, solved problem.

The purpose of D801 is to sense the location of the disc tray by detecting the slots in the tray and outputting pulses to the micro IC401 (pin 6).

874992418	**D801**	**J8/IC RPI 1391**

CDPC235, CDPC335 Subject **INTERMITTANT AUDIO - REPLACED BD TO MAIN BD FLEX CABLE**

SYMPTOMS

Right or left channel intermittently cutting out.

RESOLUTION

Replaced flex cable from BD board to main board.

164840911 **122** **FLEX CABLE**

CDPC235, **CDPC335** Subject **JAMS DISC TABLE, WON'T PLAY DISCS - REPLACE GEAR 61 AND 66**

SYMPTOMS

Unit will not play discs. BU assembly won't come up, due to interference with disc table. Occasionally, the CLV motor pulley is damaged.

RESOLUTION

To repair this problem as per Tokyo: Replace IC 401 with P/N 8-752-849-42, also verify values of R457 (2.4 ohm) R458 (750 ohm) and R459 (1.2k ohm). The P/N's of the resistors are listed in the S/M. A Service Bulletin is in the process of being issued to completely list part numbers and serial number ranges.

X49433791 **61** **GEAR, ROTARY A, ASSY**

CDPC235, **CDPC335** Subject **MECHANICAL ALIGNMENT PROCEDURE AVAILABLE, SEE S/M SUPP. #2**

SYMPTOMS

The unit had no mechanical movement. I found the above part out of item number 119 slot (down position on both units).

RESOLUTION

I reinstalled item number 123 into the slot on number 119 and the unit restored operation. Is there any written alignment procedure for this new mechanism?

We have asked Tokyo to provide the alignment procedure. -UPDATE: Please refer to service manual supplement #1 for the mechanical alignment procedure.

495728901	**123**	**BU-5BD (BASE UNIT)**

CDPC235

Subject
NO AUDIO - REPLACED OPTICAL DEVICE AND CABLES 122 AND 153

SYMPTOMS

Unit had no audio traced problem to defective cables, than unit was skipping. Found defective optics.

RESOLUTION

Replaced cables 122 and 153 and optical device.

884828111	**151**	**KSS390A**

CDPC235

Subject
STATIC IN AUDIO OUT - REPLACED IC501

SYMPTOMS

Static in audio, traced signal to IC501 sound was good going into the IC but bad going out.

RESOLUTION

Replace IC501.

875917588	**IC501**	**D19/LINE AMP/MUTING ATT**

CDPC235

Subject
TABLE KEEPS ROTATING WITH LESS THAN 3 DISCS

SYMPTOMS

With less than 3 discs in unit the table will continue to rotate unless you put some pressure on the turntable to slow it down. With 3 discs it will detect the discs and play them. With 1-2 discs it will not detect the discs and play unless you put slight pressure on the side of the turntable.

RESOLUTION

Try replacing the resistors as outlined in FPR P0144, this mod will slightly slow the rotation of the disc table. As per our conversation, this resistor mod solved the problem.

CDPC235

Subject
WEAK RIGHT CHANNEL - REPLACED LINE AMP IC501

SYMPTOMS

Right channel is weak.

RESOLUTION

Replaced line amp IC; normal operation restored.

The line amp supplies L and R audio signals to the line out jacks and the headphone amp (IC551) the same symptom, low right audio, will be noticable through both outputs.

875906166	**IC501**	**D19/LINE AMP**

CDPC235, **CDPC435**, **CDPC535**

Subject
TRAY MOTOR SPINNING BACKWARDS - REPLACE TABLE MOTOR

SYMPTOMS

Ran into this problem 5 times in past 3 weeks. Removed tray motor. Old motor is installed with lable on motor facing up. If new motor is installed with label facing up, motor will spin backwards and tray will not function properly.

RESOLUTION

When replacing this motor, I installed it with label facing down so it spins the correct way. Replaced motor because of tray hitting the BU mech. Tried resistor mod but it did not work. If the mod doesn't work, tray motor will usually fix the problem.

A4660322A	**M801**	**DISC TABLE MOTOR**

CDPC235

Subject
WON'T READ COMPLETE DISC - RESOLDERED IC101

SYMPTOMS

Unit would not read a full disc.

RESOLUTION

Resoldered IC101 of CD board.

875235194	**IC101**	**J13/CXD2515Q**

CDPC235, CDPC245, CDPC335, CDPC435, CDPC445, CDPC545, CDPCA7ES

Subject
TRAY MOTOR NOT LABELED OR WIRED CORRECTLY

SYMPTOMS

After replacing the tray motor with a new one the player would not work correctly, the tray would rotate back and forth and not recognize the cd in the unit.

RESOLUTION

Checking the old motor found, it mounted in the unit with the lable facing up and the positive terminal on the left, this turns counterclockwise. I installed the new motor the same way and it did not work. The new motor installed with label down worked correctly.

I checked the samples sent to the Tech dept. You're correct the new motor does spin in the opposite direction of the original motor. I have notified KC parts to check stock and take corrective action.

A4660322A	**M801**	**TRAY TABLE MOTOR**

CDPC235, CDPC265, CDPC335, CDPC365, CDPC445, CDPC545, CDPC745, CDPCA7ES, CDPCA8ES, CDPCA9ES

Subject
WHISTLING NOISE - ADD RTV BTWN SPINDLE MOTOR & BD BOARD

SYMPTOMS

A whistling noise (about 400HZ) manifests itself on certain cuts of disc (Goodbye Yellow Brick Road, Elton John, Polydor D103076). If you touch the optical block lightly, the noise disappears.

RESOLUTION

Remove the spindle motor from the BD board. Add a layer of silicone sealer (RTV) between the spindle motor and BD Board. Re-install the spindle motor, take care not to allow the base of the spindle motor to contact, or directly lay on the BD board during reassembly.

Adding the RTV silicone compound between the motor and BD board isolates the two parts. There is no vibration transfer from the motor and spinning disc, therefore, the whistling noise stops.

732206519	**RTV SILICONE COMPOUND**

CDPC435

Subject
ALTERNATIVE METHOD TO REPAIRING CHASSIS VS REPLACING

SYMPTOMS

Found plastic rod coming out of chassis, as shown on pg 35 of SM, can be repaired. Purpose of rod is to push on the rack release and release rack. If plastic rod breaks, disc exchange doesn't work properly. Method used is to drill a hole where the rod was all the way through, then insert a screw from under unit so threads are showing in place where rod was. Screw to proper height and lock screw head. Now screw is doing job of plastic post. Part for screw 768566014.

RESOLUTION

We continue to investigate this issue

495728501	**111**	**LEVER, SET**

CDPC435

Subject
BU ASSY CONTACT TRAY SB HFP0389 UPDATE - REPL TABLE MOTOR

SYMPTOMS

Had problem as stated in HFP0359 and put correct value resistors and replaced microprocessor with no re

RESOLUTION

of the problem. -SOLUTION: Replaced table motor, problem resolved.

A4660322A	**M801**	**TABLE MOTOR**

CDPC435

Subject
DRAWER WILL NOT OPEN - RESOLDERED MOTOR TERMINAL

SYMPTOMS

Drawer will not open motor does not run for open/close

RESOLUTION

Resoldered motor, one terminal was poorly soldered from the factory (intermittent contact). Resoldering restored normal operation.

A4608834A	**M802**	**MOTOR ASSY LOADING**

CDPC435

Subject
INTERMITTENTLY READING DISC - FLEX CABLE INTERMITTANT

SYMPTOMS

The unit would start to play fine than audio would distort and spindle goes high speed.

RESOLUTION

Replaced flex cable from main PCB to BD board unit works.

Although the flex connector may be perceived as a weak point there has been little parts movement of this piece in reference to the CDPC435.

175112311	**122**	**FLEX CABLE**

CDPC435

Subject
MECH NOISE WHEN OPEN, NO PLAY

SYMPTOMS

Unit has mech noise when open drawer or no play. Inspection under disc table found chassis part holding lever set broken, lever set loose inside unit.

RESOLUTION

The solution is to replaced chassis, part not supplied.

We will notify KCP about stocking this chassis.

495728501	**111**	**LEVER SET**

CDPC435

Subject
SERVICE MANUAL CORRECTION - U/D GEAR P/N CORRECTION

SYMPTOMS

The Service Manual for CDP-C435/C535 is incorrectly printed. The part number for U/D Gear (Ref# 119) shown as 4-957-286-04.

RESOLUTION

Correct Part number is 4-957-286-01.

495728601	**119**	**GEAR (U/D)**

CDPC435

Subject
UNIT HAD POWER BUT WAS INOPERATIVE - CN801 MAKNG BAD CONTACT

SYMPTOMS

Unit had power but was inoperative.

RESOLUTION

Connector CN801 from sensor board was not making a good connection on table motor board.

CDPC435

Subject
WIRING HARNESS TO ROTARY ENCODER NOT SEATED PROPERLY

SYMPTOMS

Player exhibited symptoms similar to either flex cable or control problems. Door opening and closing by itself, B.U. assembly would go up or down or do nothing. It did not know where it was.

RESOLUTION

Disassembled unit to look at rotary encoder. Found S3 wire going to rotary encoder from main board not fully seated into socket of encoder. Pressed wire firmly into socket. Unit restored to normal operation.

CDPC535

Subject
NO FUNCTION AFTER WARMUP, DISPLAY FLASHES OFF - REPL D601

SYMPTOMS

Unit plays ok, then after warmup, display flashes off and cycles. System control is getting reset from supply as it goes down then recovers. It starts this cycling when play is pressed and disc spins up.

RESOLUTION

Traced power supply weakness to intermittent open diode of bridge. (60hz ripple on pos supply side rather than 120hz) shunted with known good diode, worked fine.

871920082 **D601** **C21/DIODE 1IES2**

SONY

Hi-Fi Products

Service Bulletin

CSA-13

Sony Service Company - Technical Services
A Division of Sony Electronics Inc.
Sony Drive, Park Ridge, New Jersey 07656

Model: CDP-C235
CDP-C335

No. 390

Subject: Motor Drive Circuit Modification

Date: April 26, 1994

Symptom:
(62)

The BU assembly contacts the disc tray when attempting to load a disc.

Solution: Replace IC401 with the part listed below.

REF	FORMER		NEW	
	DESCRIPTION	PART NUMBER	DESCRIPTION	PART NUMBER
IC401	CXP82316-020Q	8-752-843-25	CXP82316-026Q	8-752-849-42

Verify the value of the following 1/4 watt resistors:

R457	2.4K ohm	P/N 1-247-840-00
R458	750 ohm	P/N 1-247-828-11
R459	1.2K ohm	P/N 1-249-418-11

If resistors of a different value are currently installed in these locations remove them, and replace with the proper value.

Applicable Serial numbers for CDP-C235, after 877658

Applicable Serial numbers for CDP-C335, after 854051

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CSA-13

Sony Service Company
National Technical Services
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Park Ridge, New Jersey 07656

Service Bulletin
Hi-Fi Products

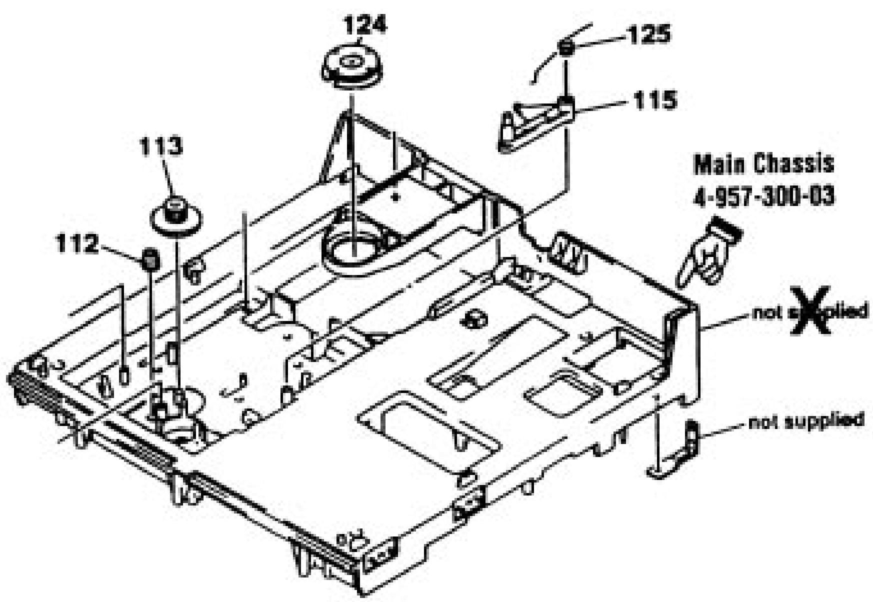
Model: **CDP-C235, CDP-C335, CDP-C435, CDP-C535** **No.** **365R1**

Subject: **Part Number Missing - Reference No. -, Main Chassis** **Date:** May 15, 1996

Symptom:
(**) The part number for Ref # -, Main Chassis, which is shown on page 23 of the Service Manual, is not listed in the parts list.

Solution: Please add the following part number to the Service Manual.

REF	DESCRIPTION	PART NUMBER
-	MAIN CHASSIS	4-957-300-03



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Hi-Fi Products
Service Bulletin

CSA-13

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A Division of Sony Electronics Inc.
Sony Drive, Park Ridge, New Jersey 07656

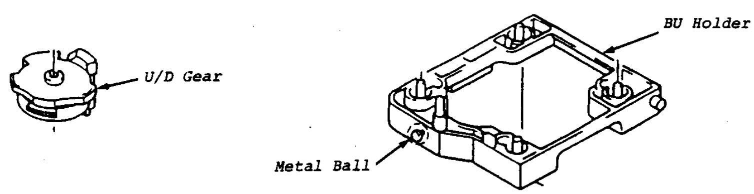
Model: CDP-C235/C335/C435/C535 **No.** 353

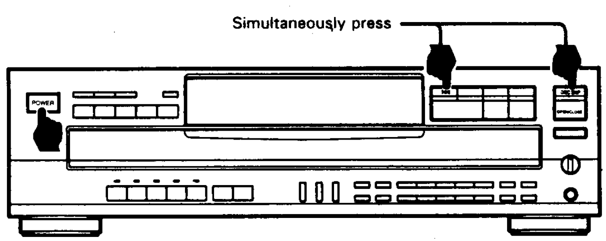
Subject: Preventing Shipping Damage When Repaired Units Are Returned To Customers. **Date:** August 31, 1993

Symptom:
(62) Shipping damage may occur if the BU holder is not set to the "up" position before packing the unit. Typically, the metal ball attached to the BU holder becomes dislodged from the U/D gear if the unit is dropped during shipping.

Solution: Prevent shipping damage by making sure the BU holder is set to the "up" position before packing the unit. To do this quickly...

- Simultaneously press the reverse AMS button and Disc Skip button.
- Turn on the power while keeping the buttons pressed.
- When the words "NO DISC" appears on the display, turn off the power.
- The unit can now be shipped safely.





Reference: Tokyo FAX to K. Tajima
Autoflagged - YES

PRINTED ON RECYCLED PAPER

PRINTED IN USA
CSA-13893-3

CDP-C235/C335

SONY®
SERVICE MANUAL

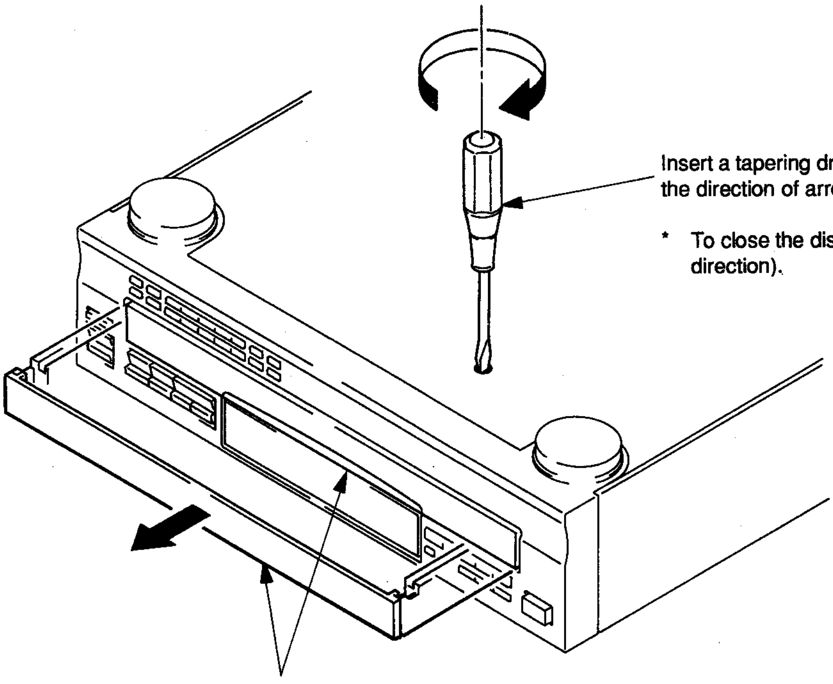
US Model
Canadian Model
AEP Model
CDP-C235/335
Australian Model
CDP-C235
UK Model
E Model
CDP-C335

SUPPLEMENT-1

File this Supplement with the Service Manual.

Subject :
- **How to open the Disc tray when Power switch turns off.**
- **Block Diagram**
- **IC Block Diagram**
- **Correction**

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

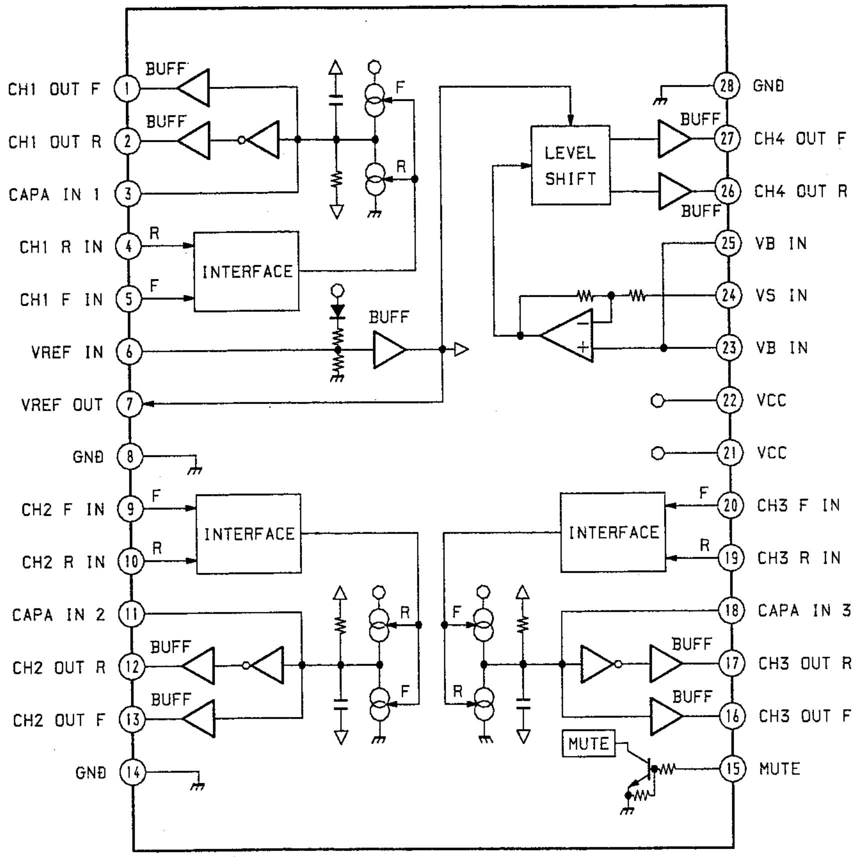


Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow (to OUT direction).

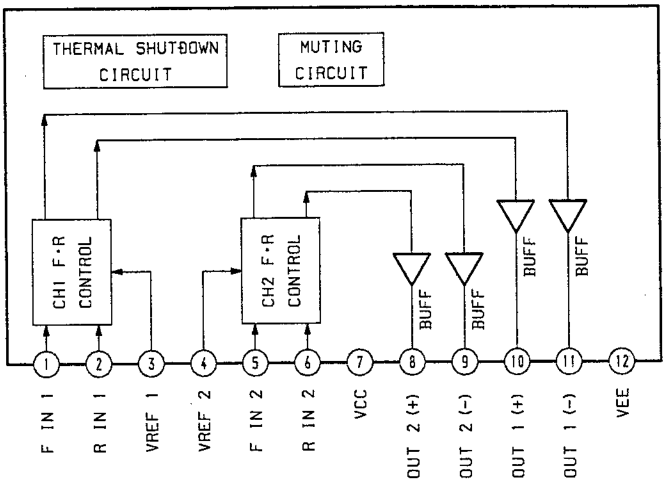
* To close the disc tray, turn the driver in the reverse direction (to IN direction).

• IC BLOCK DIAGRAM

IC102 BA6392FP

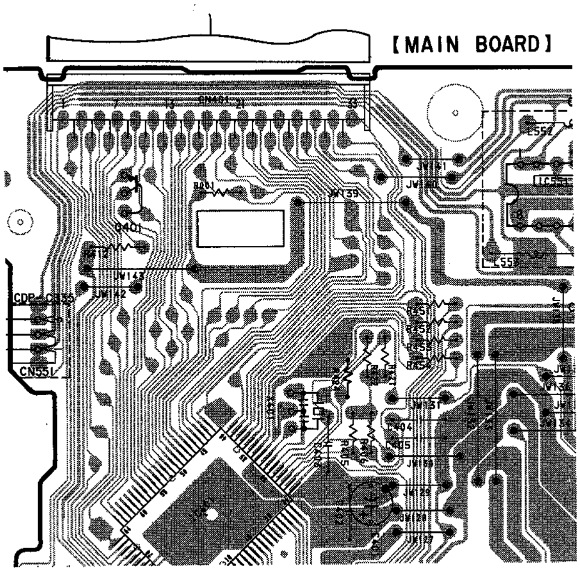
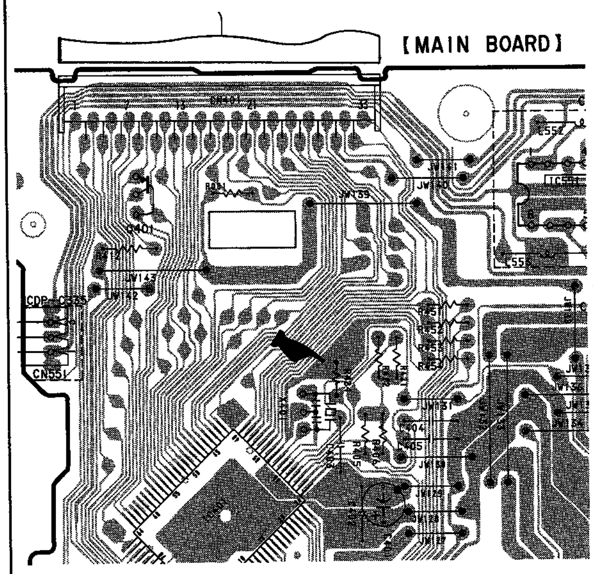
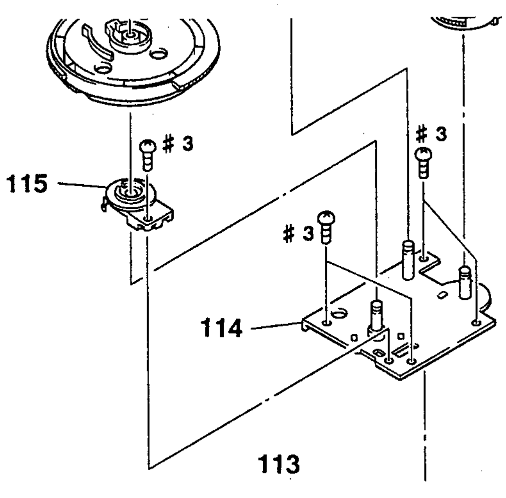
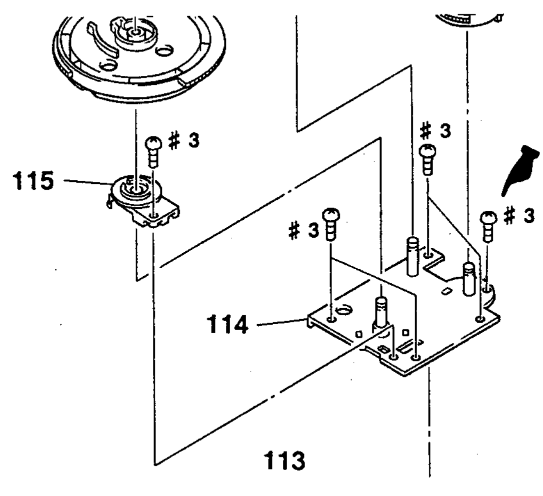


IC451 BA6191



CORRECTION

: Corrected portion

Page	Incorrect	Correct
13		
23		
	121 4-958-593-01 SPRING (BU), COMPRESSION	121 <u>4-948-503-01</u> SPRING (BU), COMPRESSION

English
93E0998-1
Printed in Japan

Sony Corporation
Audio Group
9-957-757-81
Published by Audio Sector Quality Assurance Dept.

CDP-C235/C335

SONY

SERVICE MANUAL

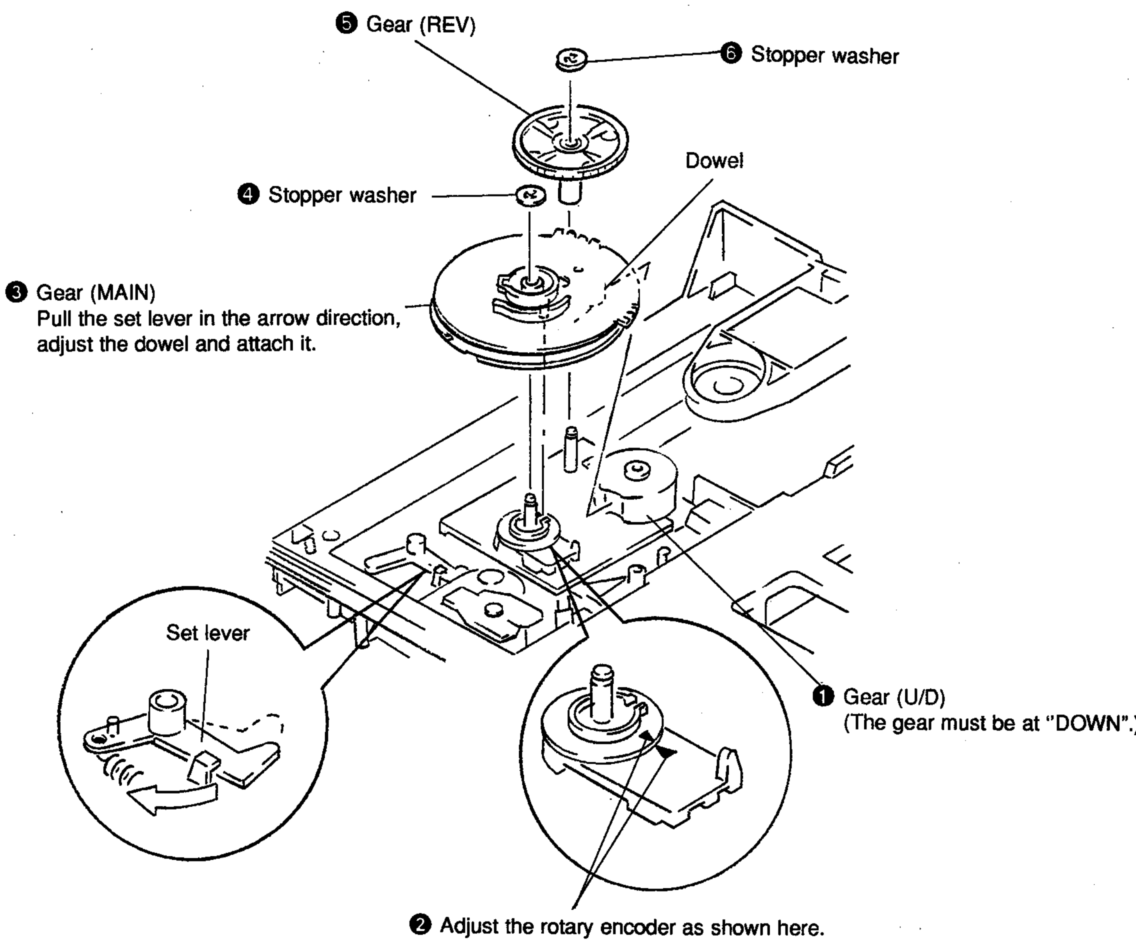
US Model
Canadian Model
AEP Model
CDP-C235/C335
Australian Model
CDP-C235
UK Model
E Model
CDP-C335

SUPPLEMENT-2

File this Supplement with the Service Manual.

Subject : Positioning the Encoder When Attaching the Gear (MAIN)
The position of the rotary encoder must be adjusted when attaching the gear (MAIN). If its position is not adjusted properly, problem may occur afterwards during operation.

: Correction



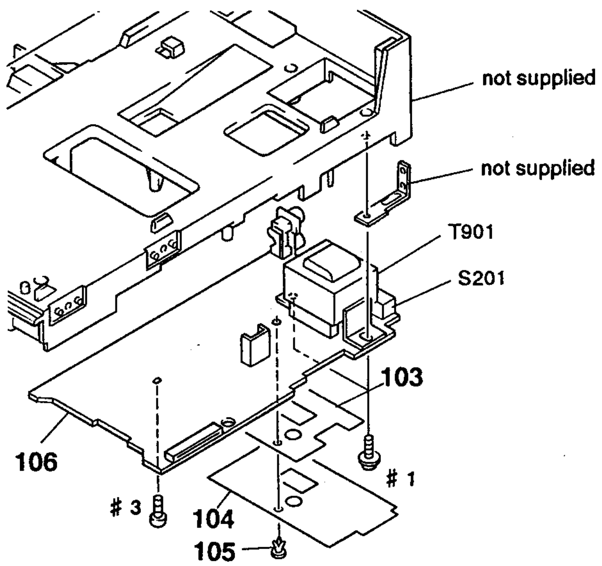
CORRECTION

Please correct your Service Manual.

6-3. CHASSIS ASSEMBLY (Page 23)

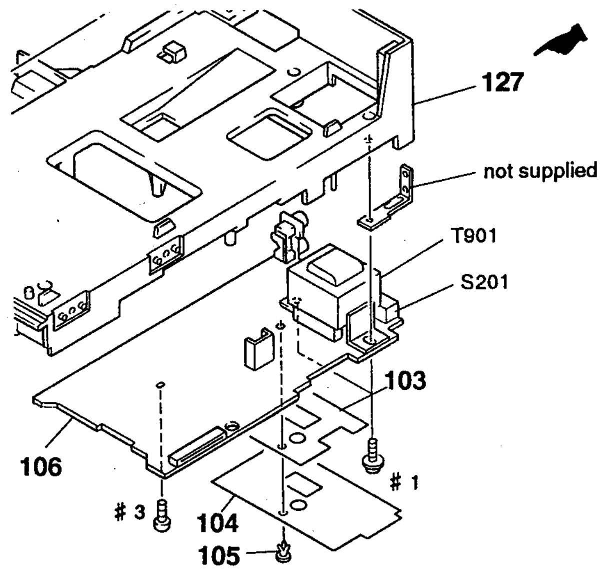
☛ : Corrected portion

Incorrect



Ref. No.	Part No.	Description	Remark
		—	

Correct



Ref. No.	Part No.	Description	Remark
* 127	4-957-300-03	CHASSIS ☚	

English
93K09101-1D
Printed in Japan
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Published by Audio Sector Quality Assurance Dept.
9-957-757-82
Sony Corporation
Audio Group

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National Technical Services
A Division of Sony Electronics Inc.
Park Ridge, New Jersey 07656

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CSA-13

Service Bulletin
Hi-Fi Products

Model: **CDP-C235, CDP-C335, CDP-C435, CDP-C535** **No.** **490**

Subject: **Substitution for KSS-390A** **Date:** June 14, 1996

Symptom:
(**)

The Optical Block KSS-390A is no longer available and KSS-240A is supplied as the substitution. As the two parts have some electrical and mechanical differences, please perform the following changes according to the model being serviced.

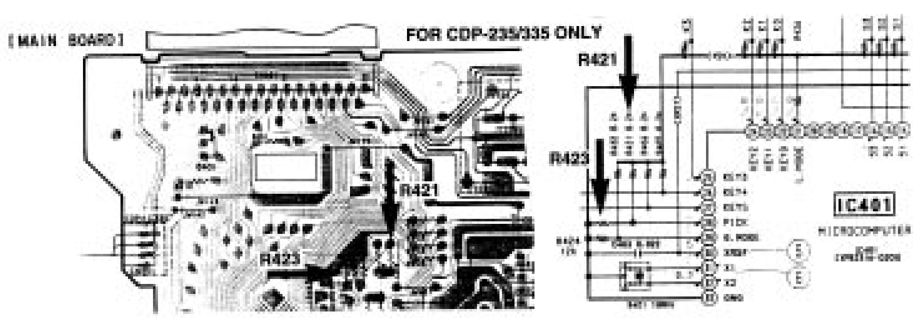
Solution: **For CDP-C235/335:**

1. Check the value of R421. If it is 8.2KΩ or less, leave it in circuit. Otherwise, remove it and replace it with a jumper wire.
2. Confirm the existence of R423. If it is mounted, remove it. This is needed to keep pin 28 of IC401 High when operating CD function.
3. Replace the flat wire which connects the BD Board and Optical Block with the new type listed below.

For CDP-C435/535:

Just replace the flat cable with the new type. No circuit modifications needed.

Description	Part Number	Note
Flat Cable	1-575-001-11	This cable must be used with KSS-240A



CDP-C235/C335

SERVICE MANUAL

US Model
Canadian Model
AEP Model
CDP-C235/335
Australian Model
CDP-C235
UK Model
E Model
CDP-C335

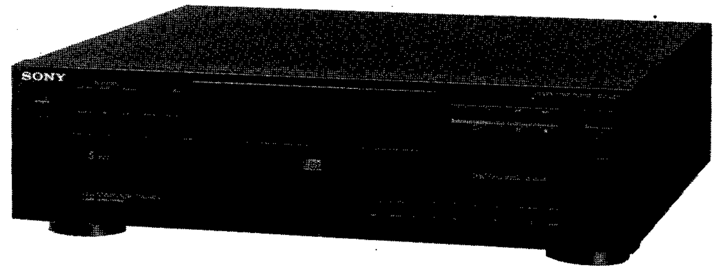


Photo : CDP-C235

Model Name Using Similar Mechanism	CDP-C225/C325
Optical Pick-up Block Type	BU-5BD13

SPECIFICATIONS

Compact Disc Player

System	Compact disc digital audio system
Laser	Semiconductor laser
Wavelength	780-790 nm
Frequency response	2 Hz-20 kHz (±0.5 dB)
Signal to noise ratio	More than 102 dB
Dynamic range	More than 98 dB
Harmonic distortion	Less than 0.0045%
Channel separation	More than 100 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
PHONES (stereo phone jack)	Output level max. 10 mW Load impedance 32 ohms (CDP-C335 only)

General

Power requirements	Model for US and Canadian 120V AC, 60Hz Model for Australian and UK 240V AC, 50/60 Hz Model for E 110—120V, 220—240V AC, 50/60Hz
Power consumption	14 W
Dimensions (w/h/d)	Approx. 430 × 125 × 385 mm (17 × 5 × 15 1/4 inches) (CDP-C335/C235) Including projecting parts and controls
Mass	Approx. 5.6 kg , net (12 lbs 6oz) (CDP-C335/C235)

Remote Commander	**RM-D335 (CDP-C335 only)**
Remote control system	Infrared control
Power requirements	3 V DC with two size AA batteries (IEC designation R6)
Dimensions	45 × 185 × 20 mm (w/h/d) (1 13/16 × 7 3/8 × 13/16 inches)
Mass	100 g (3.5 oz) including batteries

Supplied accessories

Audio signal connecting cord
(phono plug x 2 — phono plug x 2) (1)
Remote commander (1) (CDP-C335 only)
Sony SUM-3 (NS) batteries (2) (CDP-C335 only)
AC plug adaptor (1) (CDP-C335 E model only)

Design and specifications are subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY®

For the Customers in Canada

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

THIS APPARATUS COMPLIES WITH THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.

For the Customers in Australia

The following caution label is located inside of the unit.

DANGER	DANGER
INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DERECT EXPOSURE TO BEAM.	RADIATION DE LESER INVISIBLE LORS D'OUVERTURE AVEC L'ENCLENCHEMENT DE SECURITE ANNULE. EVITER L'EXPOSITION DIRECTE AU RAYON. 4-906-403-01

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

TABLE OF CONTENTS

SAFETY-RELATED COMPONENT WARNING!!

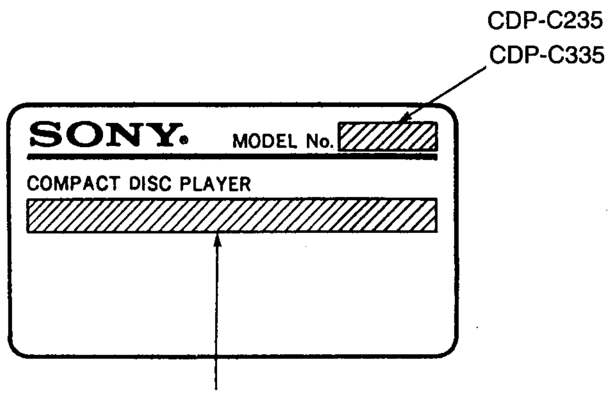
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION

—Model Number Label—



US, Canadian model : AC : 120V 60Hz
UK, Australian model : AC : 240V~50/60Hz
AEP model : AC : 220–230V~50/60Hz
E model : AC : 110–120V, 220–240V~50/60Hz

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

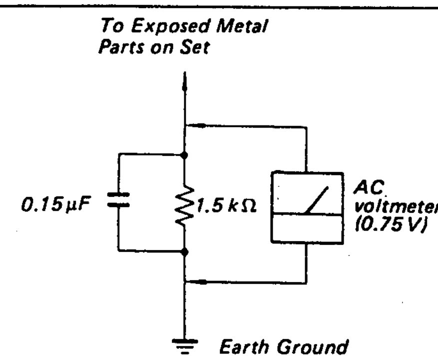


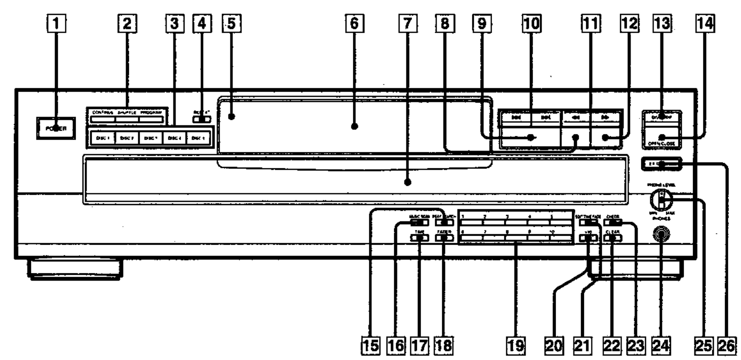
Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Identifying the Parts

Front Panel

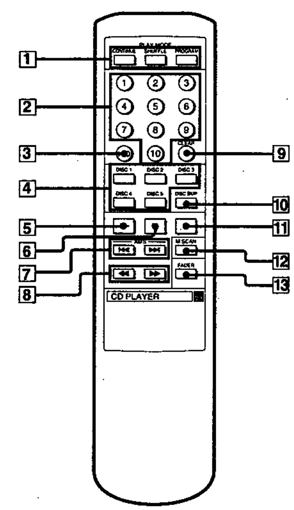


See the pages indicated in ( ) for details.

1. POWER switch (8)
2. PLAY MODE buttons
   CONTINUE button (8)
   SHUFFLE button (13)
   PROGRAM button (14)
3. DISC 1-5 buttons (8)
4. REPEAT button (18)
5. Remote sensor (4)
6. Display window (8)
7. Disc tray (8)
8. ❚❚ (pause) button (8)
9. ▶ (play) button (8)
10. ❙◀◀/▶▶❙ (AMS*) buttons (10)
11. ◀◀/▶▶ (manual search) buttons (10)
12. ■ (stop) button (8)
13. DISC SKIP button (8)
14. ≜ OPEN/CLOSE button (8)
15. PEAK SEARCH button (19)
16. MUSIC SCAN (M. SCAN) button (17)
17. TIME button (9)
18. FADER button (12)
19. Numeric buttons (10)
20. >10 (over 10) button (10)
21. EDIT/TIME FADE button (20)
22. CLEAR button (14)
23. CHECK button (16)
24. PHONES jack (CDP-C335 only) (9)
25. PHONE LEVEL control
    (CDP-C335 only) (9)
26. EX-CHANGE button (11)

* AMS is the abbreviation for Automatic Music Sensor.

Remote Commander (CDP-C335 only)

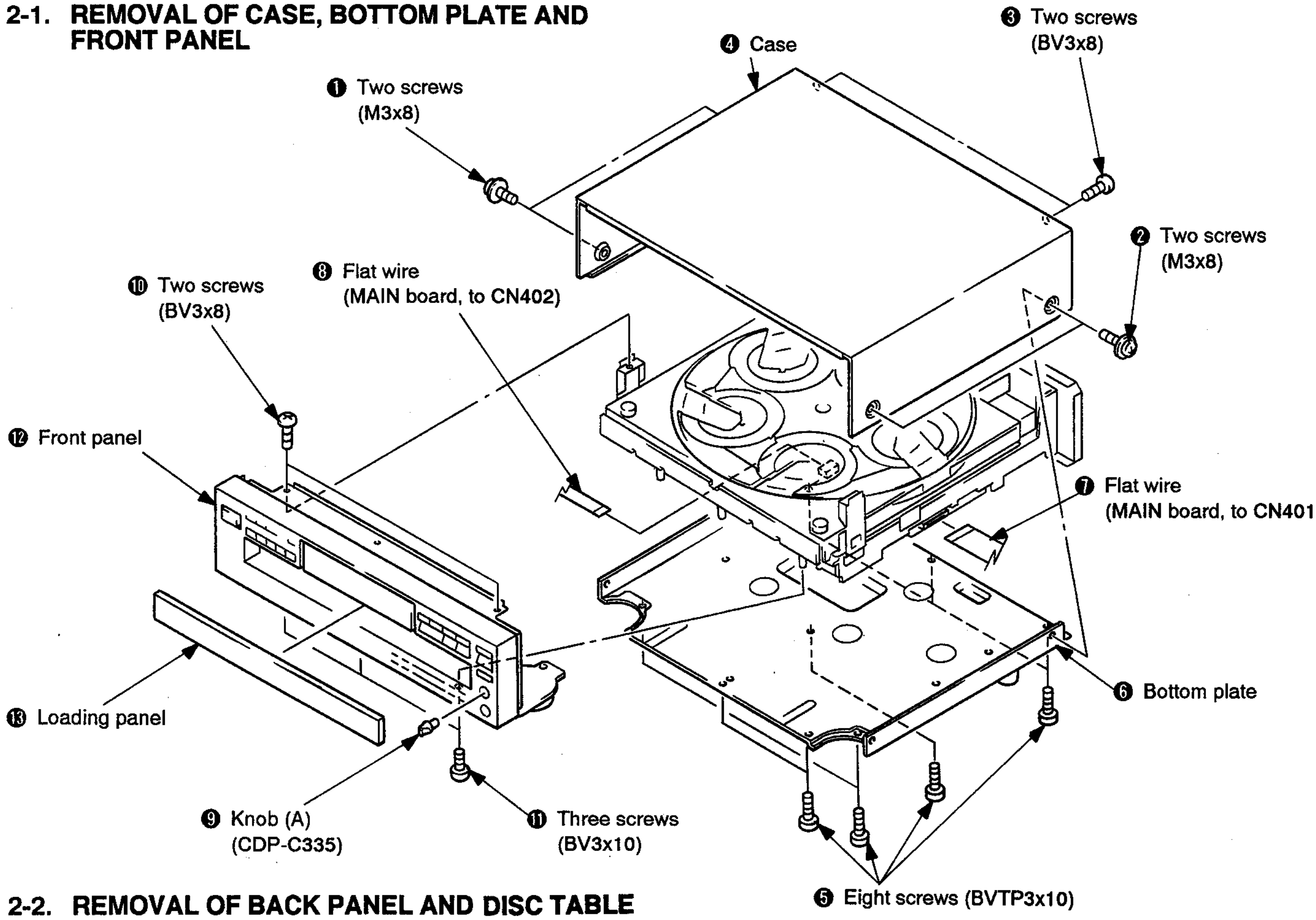


See the pages indicated in ( ) for details.

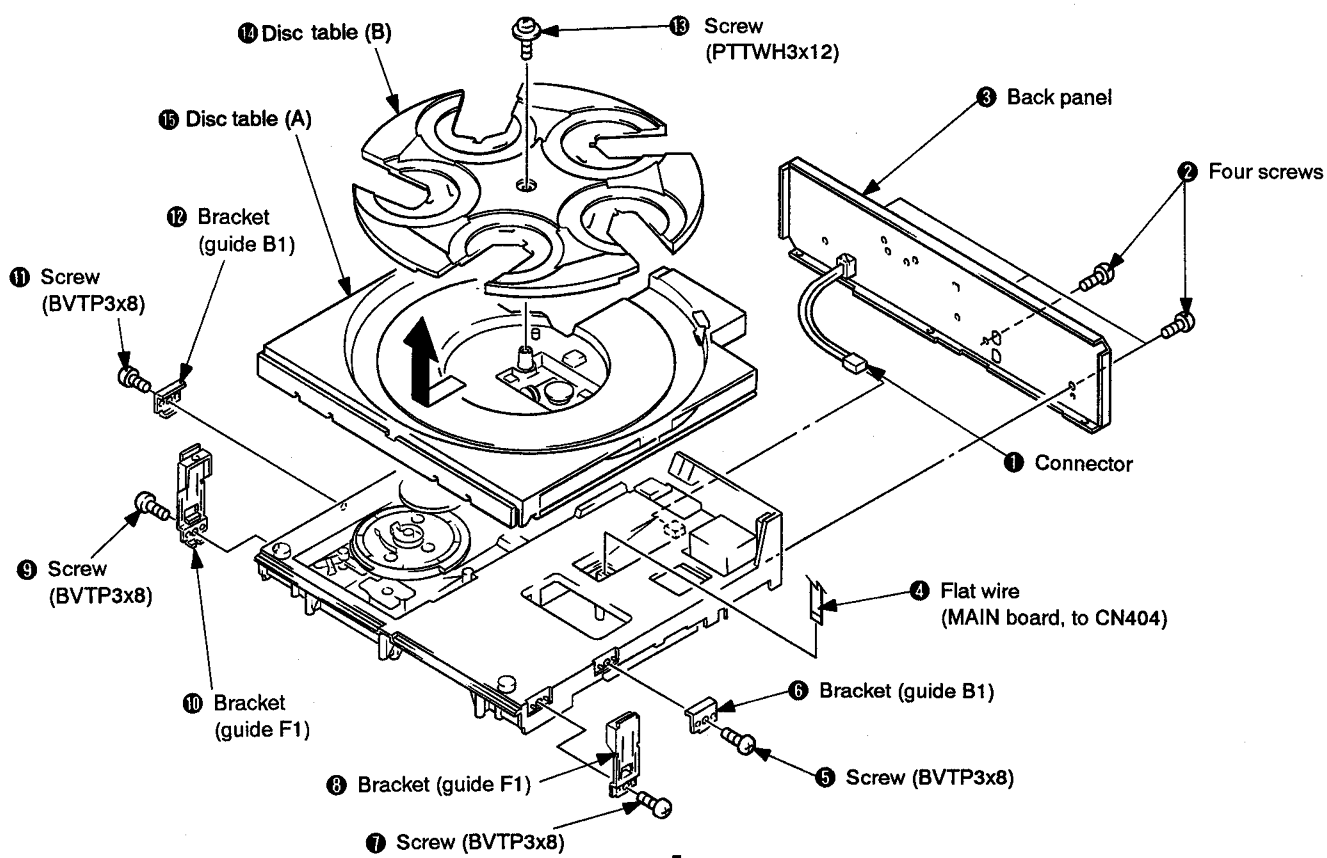
1. PLAY MODE buttons
   CONTINUE button (8)
   SHUFFLE button (13)
   PROGRAM button (14)
2. Numeric buttons (10)
3. >10 (over 10) button (10)
4. DISC 1-5 buttons (8)
5. ▶ (play) button (8)
6. ❚❚ (pause) button (8)
7. ❙◀◀/▶▶❙ (AMS) buttons (10)
8. ◀◀/▶▶ (manual search) buttons (10)
9. CLEAR button (14)
10. DISC SKIP button (8)
11. ■ (stop) button (8)
12. MUSIC SCAN (M. SCAN) button (17)
13. FADER button (12)

SECTION 2
DISASSEMBLY

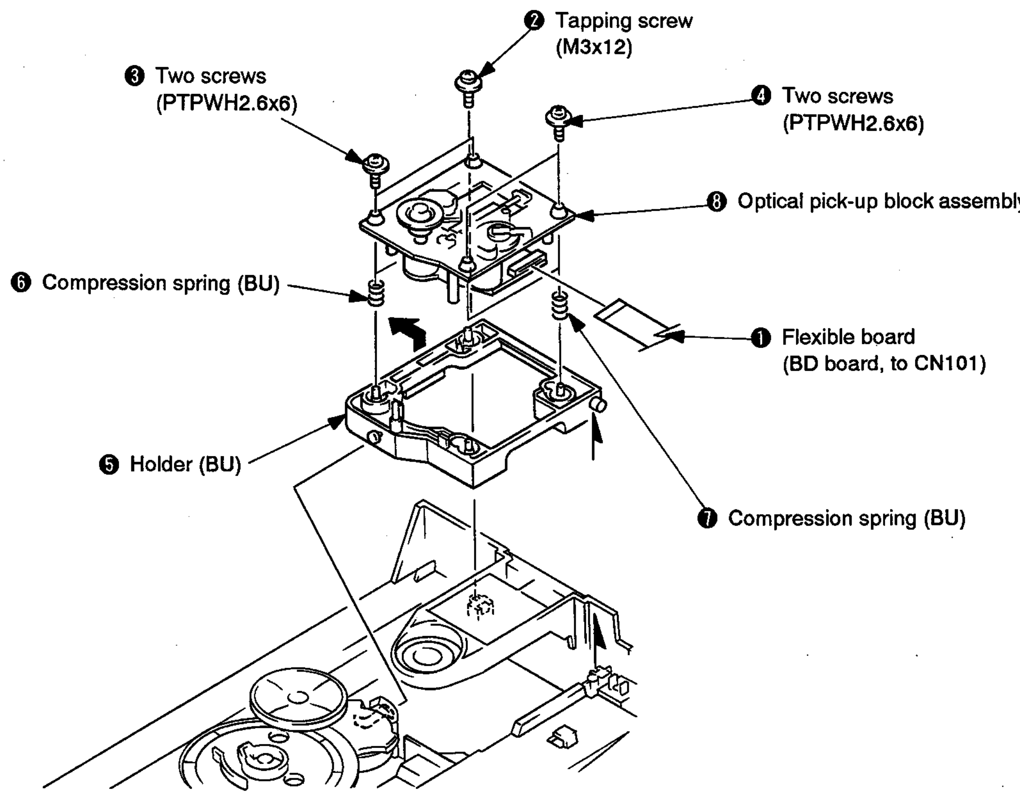
2-1. REMOVAL OF CASE, BOTTOM PLATE AND FRONT PANEL



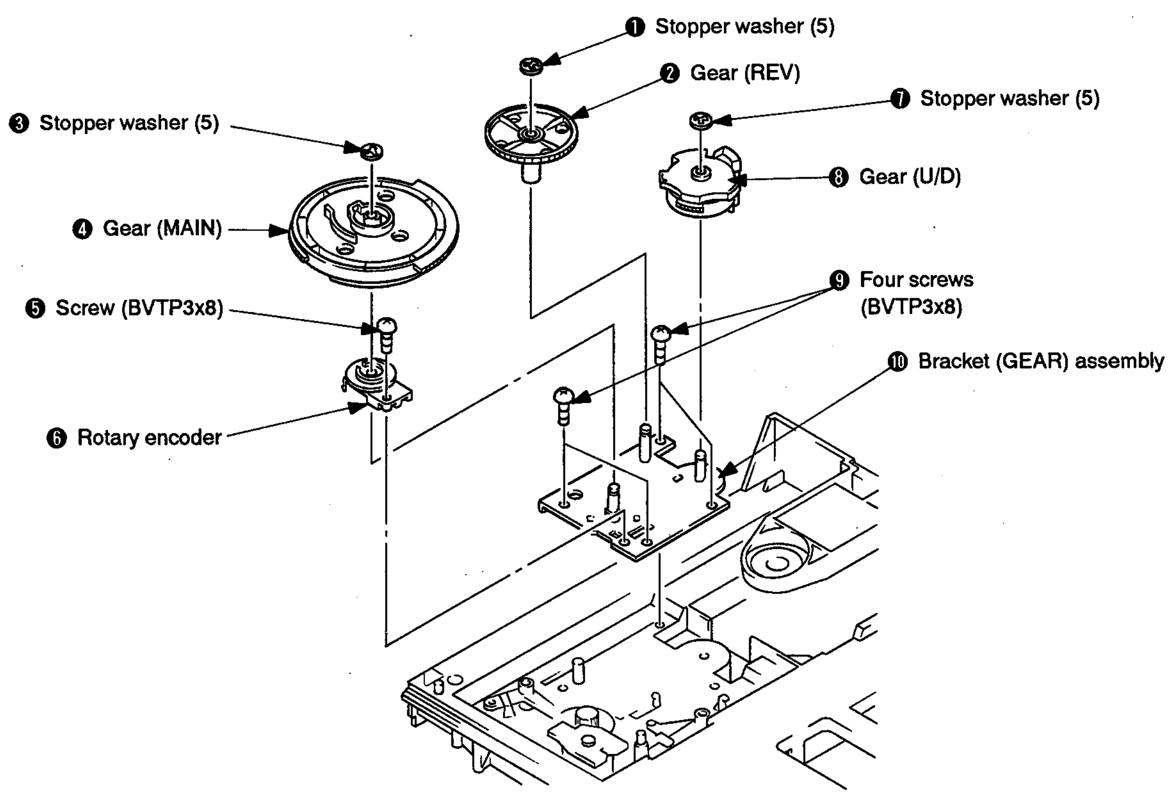
2-2. REMOVAL OF BACK PANEL AND DISC TABLE



2-3. REMOVAL OF OPTICAL PICK-UP BLOCK ASSEMBLY



2-4. REMOVAL OF BRACKET (GEAR) ASSEMBLY

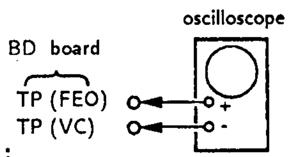


SECTION 3
ELECTRICAL BLOCK CHECKING

Note:

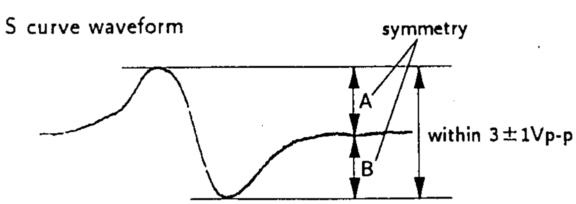
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure:

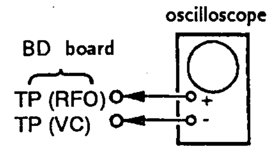
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FE1) and TP (VC) by lead wire
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.



5. After check, remove the lead wire connected in step 2.

Note: • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

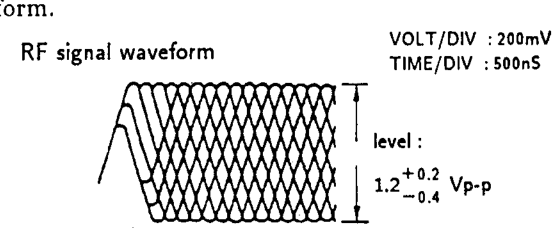
RF Level Check



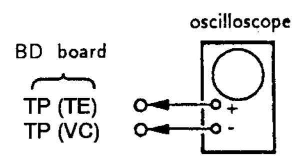
Procedure:

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note:
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

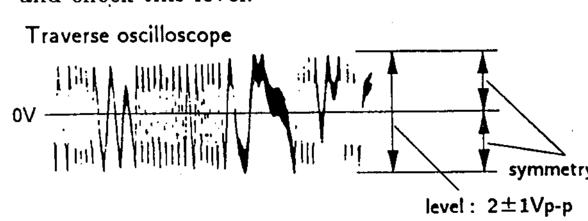


E-F Balance Check



Procedure:

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

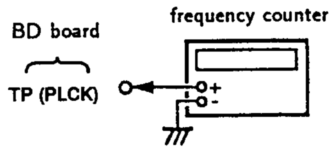


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.



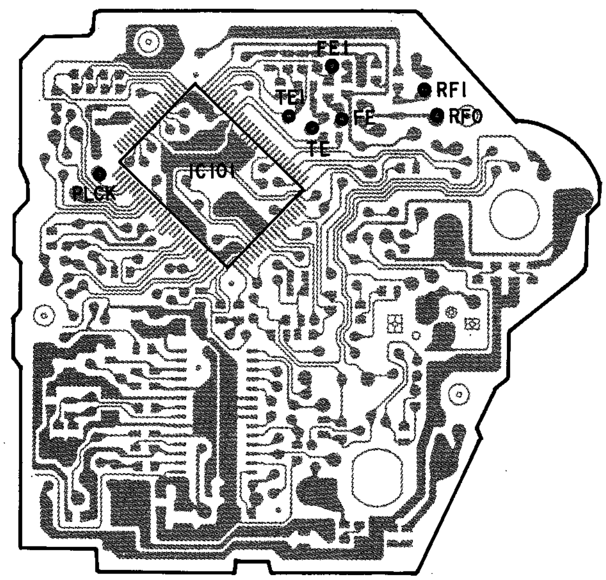
2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Locations :
[BD board]

— conductor side —



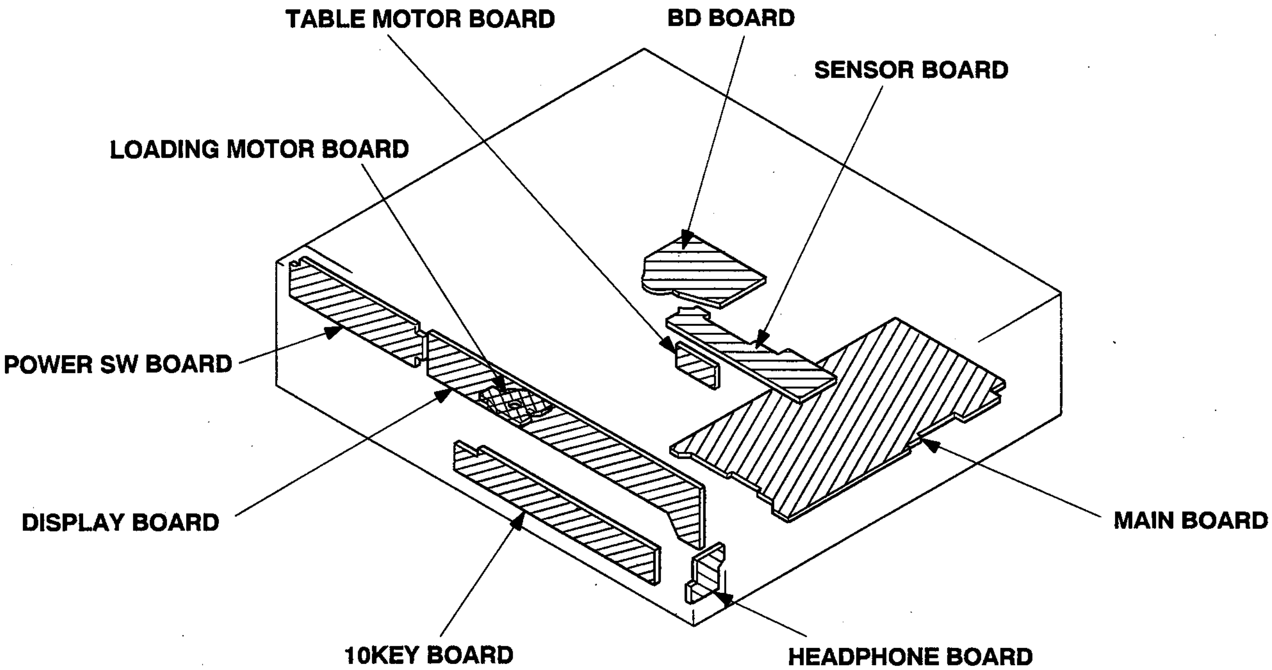
SECTION 4
IC PIN FUNCTIONS

CXP82316-020Q (IC401) PIN FUNCTIONS

PIN No.	PIN NAME	I/O	FUNCTION
1	AF ADJ	I	Test mode pin. Normally: "H"
2	RM IN	I	Remote control signal input pin.
3	ADJ	I	Test mode pin. Normally: "H"
4	A MUTE	O	Analog muting control signal output pin.
5	LDON	O	Optical pick-up laser diode control pin. ON: "H"
6	T.SENS	I	Slit sensor of disc table input pin.
7	PRGL	O	Latch signal output pin to digital filter IC.
8	CLK	O	Serial clock output pin.
9	XLT	O	Serial data latch signal output pin.
10	DATA	O	Serial data output pin.
11	SQCLK	O	Subcode Q data readout clock output pin.
12	SUBQ	I	Subcode Q data input pin.
13	SCLK	O	Internal register of SSP/DSP readout clock output pin.
14 to 16	ENC1 to ENC3	I	Loading encoder input pin.
17 to 20	–	–	Not used.
21	L.MODE	I	Loading mode setup pin.
22 to 27	KEY0 to KEY5	I	Key input pin. (A/D)
28	PICK	I	Optical pick-up setup pin. 0V: KSS-240A, 2.5V: KSS-390A, 5V: Automatic discrimination
29	D.MODE	I	Disc table feeling and stop precision fine adjustment pin.
30	XRST	I	Reset signal input pin.
31	X1	I	10MHz clock input pin.
32	X2	O	10MHz clock output pin.
33	GND	–	GND
34	LODOUT	O	Loading motor control pin.
35	LODIN	O	Loading motor control pin.
36	TBLL	O	Table motor control pin.
37	TBLR	O	Table motor control pin.
38 to 57	P1 to P20	O	FL segment output pin.
58 to 62		–	Not used.
63 to 70	G1 to G8	O	FL timing output pin.
71	–30V	–	–30V
72	+5V	–	+5V
73		–	+5V
74 to 77		–	Not used.
78	D.SENS	I	Disc sensor input pin. "L": disc present.
79	SENSE	I	SENSE signal input pin.
80	SCOR	I	Subcode Q data readout timing signal input pin.

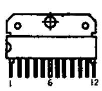
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION

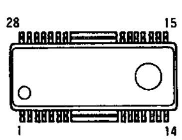


5-2. SEMICONDUCTOR LEAD LAYOUTS

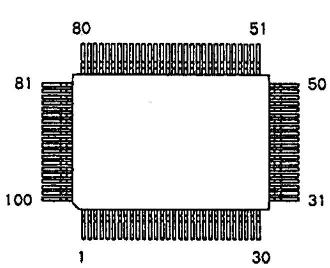
BA6191



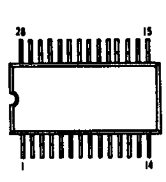
BA6392FP-T1



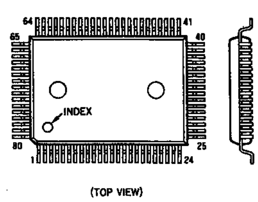
CXD2515Q
CXD2599Q



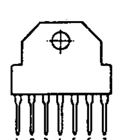
CXD25605M-T6



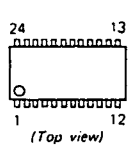
CXP82316-020Q



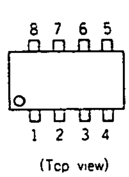
LA5602



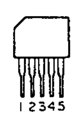
LA9215



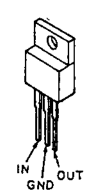
M5218AP



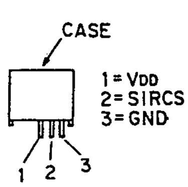
M5293L



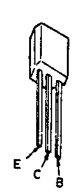
M5F78M07



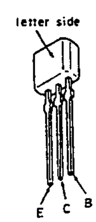
SBX1610-59



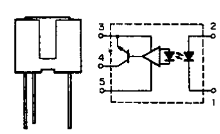
2SC2603-EF
DTA114ES
DTC114ES



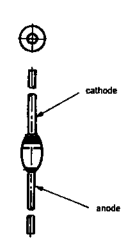
2SA1175-HFE
DTC144ES



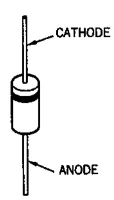
RPI-1391



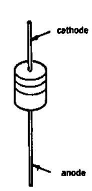
MTZJ-T-72-6.2A



1N4148M

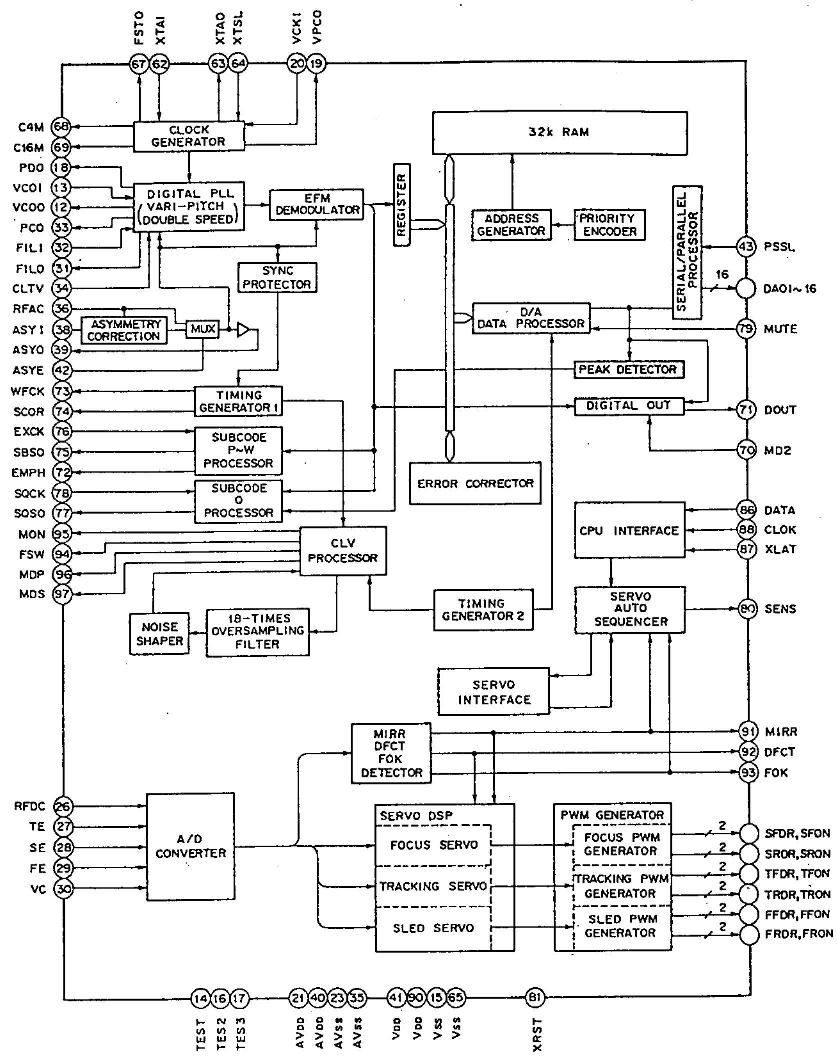


11ES2
RD6.2ES-B1
RD9.1ES-B2

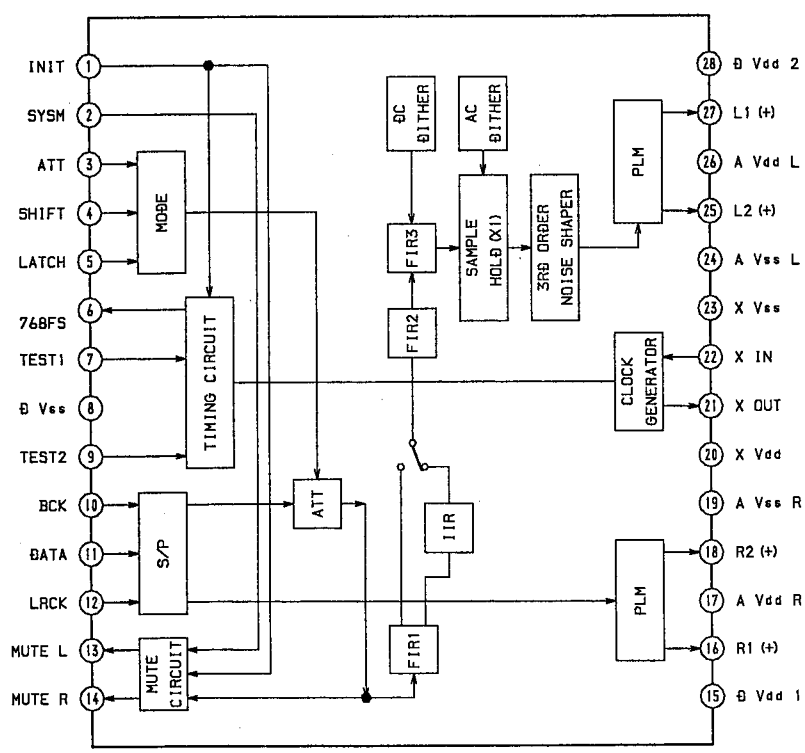


5-5. IC BLOCK DIAGRAM

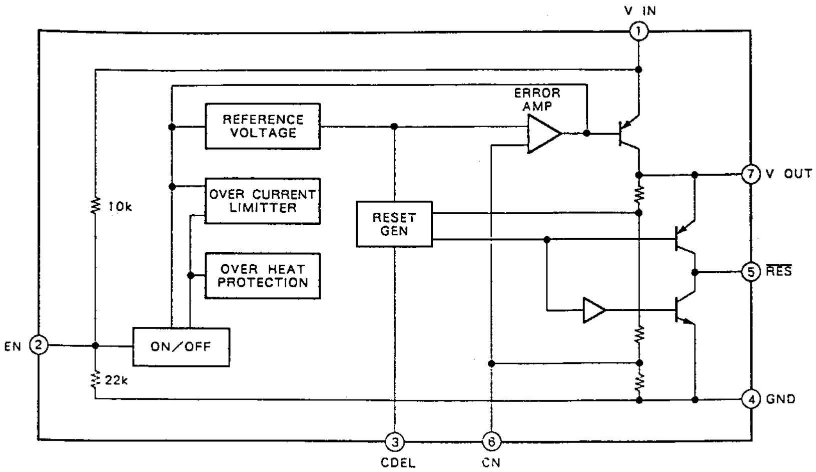
IC101 CXD2515Q/2599Q



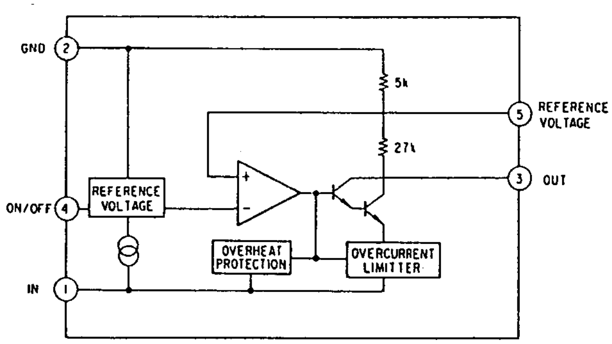
IC103 CXD2565M



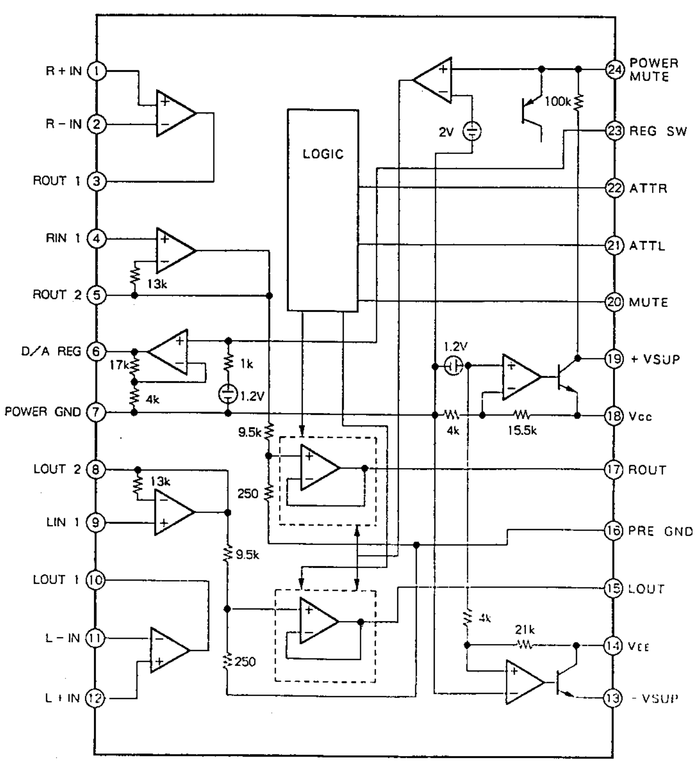
IC201 LA5602



IC203 M5293L



IC501 LA9215



SECTION 6
EXPLODED VIEWS

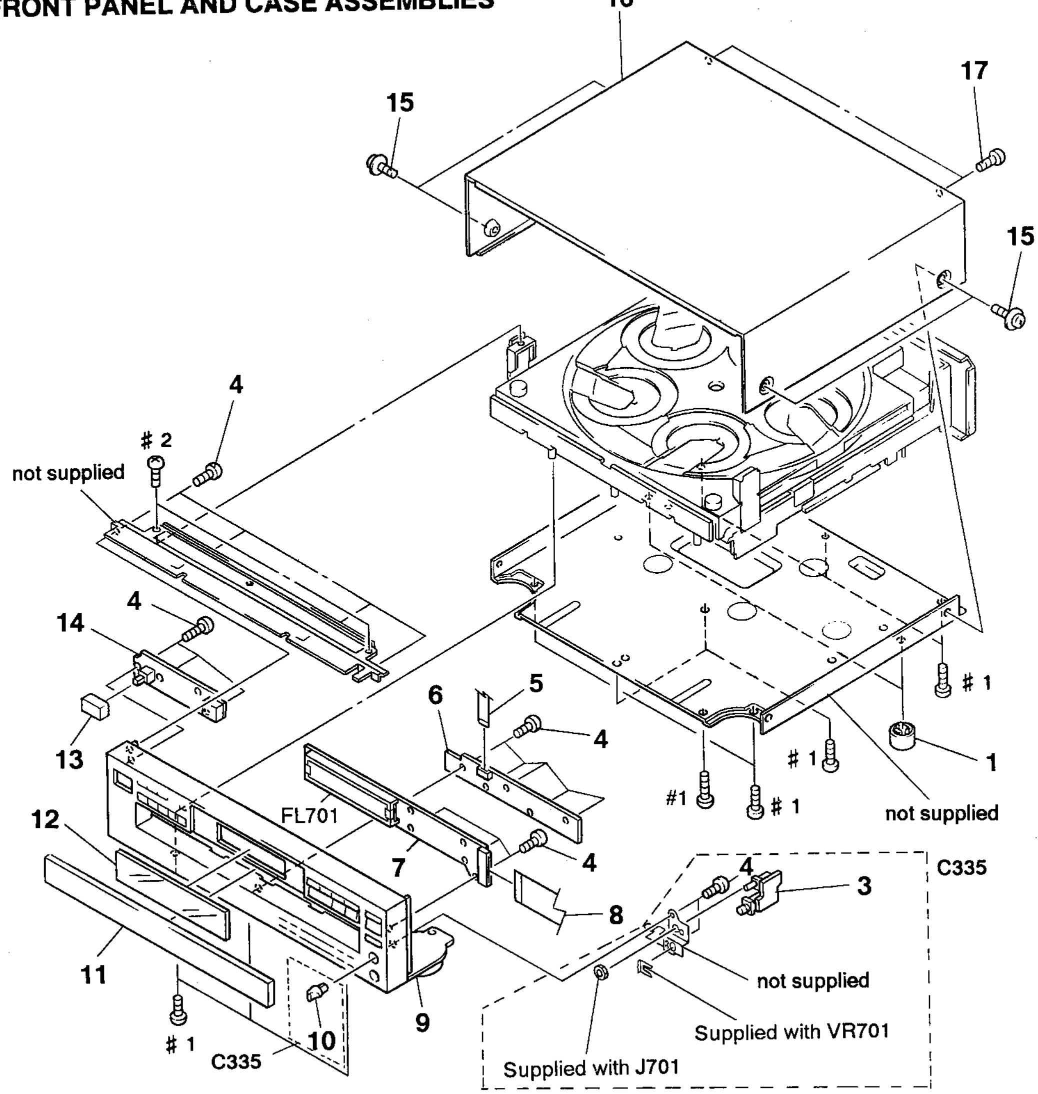
NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- CND : Canadian model
- AUS : Australian model

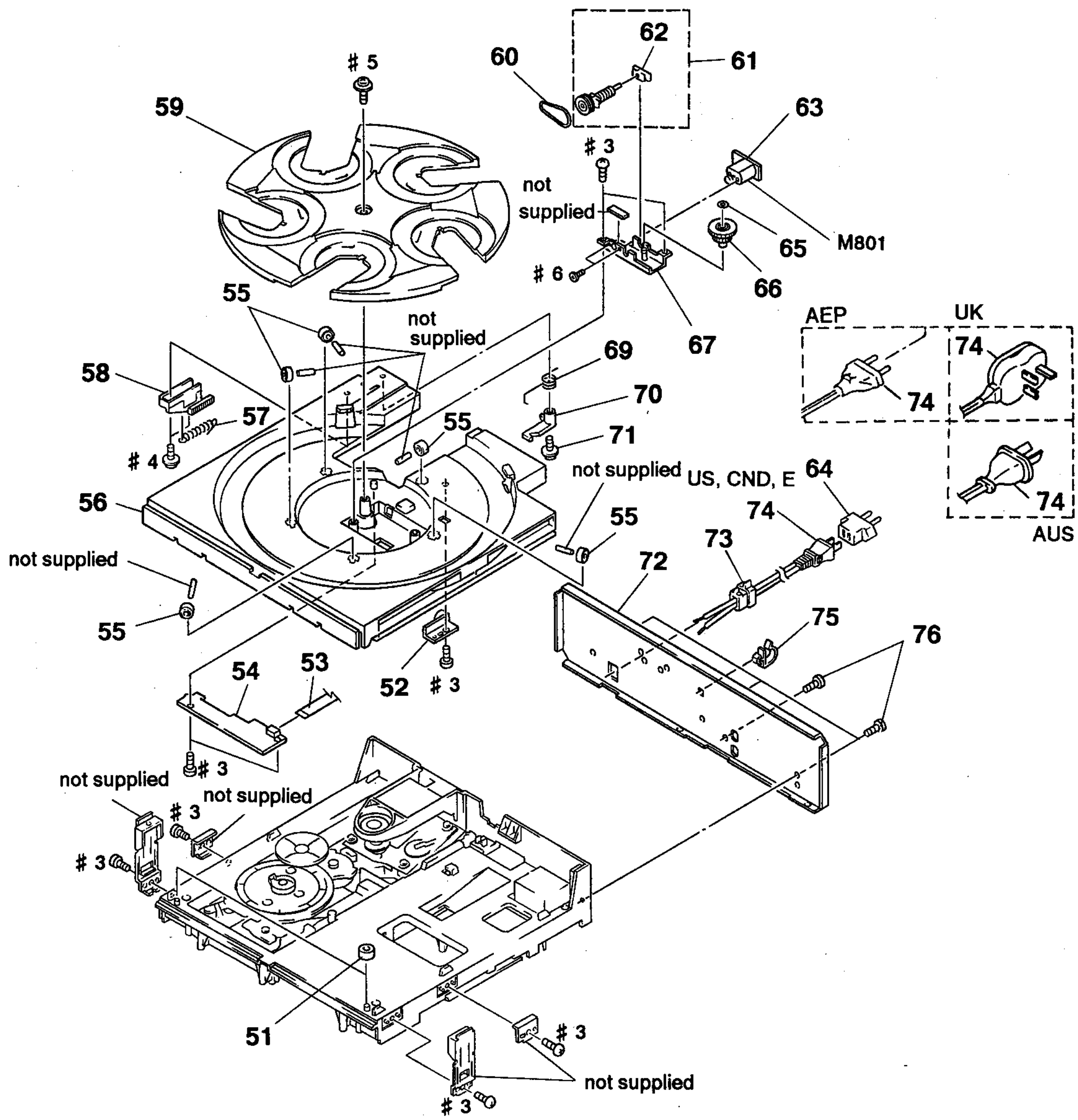
6-1. FRONT PANEL AND CASE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	4-933-601-01	FOOT	
* 3	1-647-544-11	HEADPHONE BOARD (C335)	
4	4-951-620-01	SCREW (2.6X8), +BVTP	
5	1-751-054-11	WIRE (FLAT TYPE) (10 CORE)	
* 6	1-647-543-11	10 KEY BOARD	
* 7	A-4649-651-A	DISPLAY BOARD, COMPLETE	
8	1-751-053-11	WIRE (FLAT TYPE) (33 CORE)	
9	X-4943-506-1	PANEL ASSY, FRONT (C335:US, CND)	
9	X-4943-507-1	PANEL ASSY, FRONT (C335:AEP, UK, E)	
9	X-4943-510-1	PANEL ASSY, FRONT (C235:US, CND)	
9	X-4943-511-1	PANEL ASSY, FRONT (C235:AEP, AUS)	

Ref. No.	Part No.	Description	Remark
10	4-950-189-01	KNOB (A) (VOL) (C335)	
11	4-957-557-01	PANEL, LOADING (C335)	
11	4-957-557-11	PANEL, LOADING (C235)	
12	4-957-548-01	PLATE (FL), INDICATION (C335)	
12	4-957-548-11	PLATE (FL), INDICATION (C235)	
13	4-922-921-01	BUTTON (POWER)	
* 14	1-647-542-11	POWER SW BOARD	
15	3-704-366-01	SCREW (CASE) (M3X8)	
* 16	4-944-153-01	CASE	
17	3-703-685-21	SCREW (+BV 3X8)	
FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	

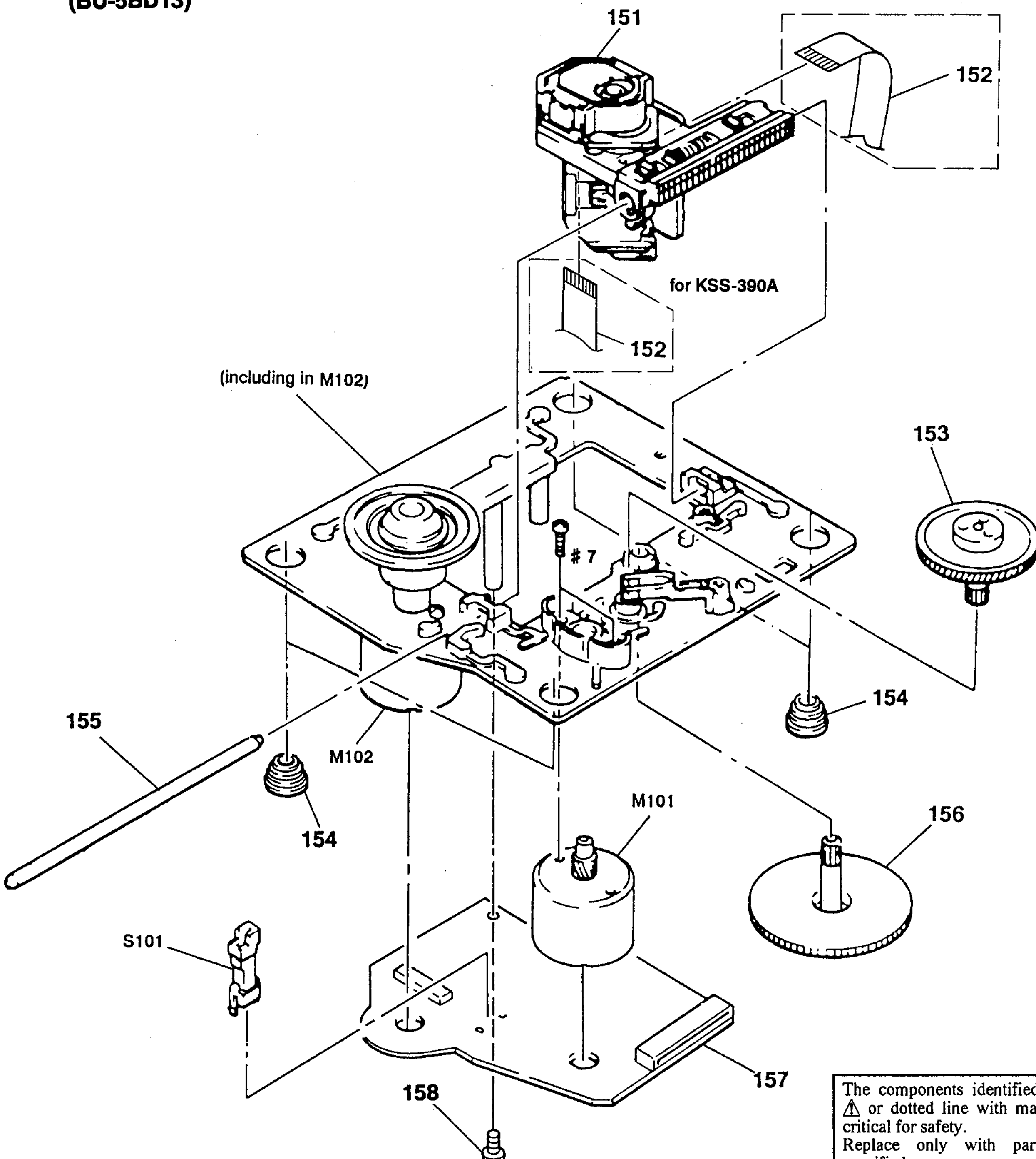
6-2. BACK PANEL AND DISC TABLE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
51	4-951-619-01	CUSHION (A)	
52	X-4943-480-1	BRACKET (ROLLER D) ASSY	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)	
* 54	1-647-362-11	SENSOR BOARD	
55	X-4924-457-1	ROLLER ASSY	
* 56	4-957-298-01	TABLE (A), DISC	
57	4-957-294-01	SPRING (D.T), TENSION	
58	4-957-292-01	SLIDER (RACK)	
59	4-957-299-01	TABLE (B), DISC	
60	4-957-304-01	BELT (RM)	
61	X-4943-479-1	GEAR (ROTARY A) ASSY	
62	4-957-278-01	BEARING (ROTARY A)	
63	1-647-364-11	TABLE MOTOR BOARD	
64	1-569-007-11	ADAPTER, CONVERSION 2P (C335:E)	
65	3-325-697-01	WASHER	
66	4-957-284-01	GEAR (LOTARY B)	
67	X-4943-477-1	BRACKET (RM) ASSY	
69	4-957-293-01	SPRING (RACK RELEASE)	
70	4-957-291-01	LEVER (RACK RELEASE)	

Ref. No.	Part No.	Description	Remark
71	4-957-868-01	SCREW (+PTPWH 2.6X20)	
* 72	4-957-560-01	PANEL, BACK (C335:US, CND)	
* 72	4-957-560-11	PANEL, BACK (C335:AEP)	
* 72	4-957-560-21	PANEL, BACK (C335:E)	
* 72	4-957-560-31	PANEL, BACK (C235:AUS)	
* 72	4-957-560-41	PANEL, BACK (C335:UK)	
* 72	4-957-560-51	PANEL, BACK (C235:US, CND)	
* 72	4-957-560-61	PANEL, BACK (C235:AEP)	
* 73	3-703-244-00	BUSHING (2104), CORD (EXCEPT FOR E)	
* 73	3-703-571-11	BUSHING (S) (4516), CORD (E)	
74	1-575-651-21	CORD, POWER (AEP)	
74	1-590-836-11	CORD, POWER (US, CND)	
74	1-696-027-11	CORD, POWER (E)	
74	1-696-571-11	CORD, POWER (UK)	
74	1-696-845-11	CORD, POWER (AUS)	
* 75	4-949-235-01	HOOK	
76	3-704-515-21	SCREW (BV/RING)	
M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	

6-4. OPTICAL PICK-UP BLOCK ASSEMBLY (BU-5BD13)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠151	8-848-144-11	DEVICE, OPTICAL KSS-240A	
⚠151	8-848-281-11	DEVICE, OPTICAL KSS-390A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE) (for KSS-240A)	
152	1-647-341-11	PC BOARD, FLEXIBLE(for KSS-390A)	
153	4-917-567-01	GEAR (M)	
154	4-951-940-01	INSULATOR (BU)	
155	4-917-565-01	SHAFT, SLED	
156	4-917-564-01	GEAR (P), FLATNESS	
* 157	A-4649-610-A	BD BOARD, COMPLETE	
158	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
S101	1-572-085-11	SWITCH, LEAF	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- CND : Canadian model
- AUS : Australian model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Hardware (# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description					Remark
*	1-647-543-11	10 KEY BOARD					
		************					
		< CONNECTOR >					
CN751	1-750-228-11	CONNECTOR, FFC(LIGHT ANGLE)10P					
		< RESISTOR >					
R751	1-249-418-11	CARBON	1.2K	5%	1/4W	F	
R752	1-247-836-11	CARBON	1.6K	5%	1/4W		
R753	1-249-421-11	CARBON	2.2K	5%	1/4W	F	
R754	1-249-423-11	CARBON	3.3K	5%	1/4W	F	
R755	1-249-426-11	CARBON	5.6K	5%	1/4W		
R756	1-247-856-00	CARBON	11K	5%	1/4W		
R757	1-249-435-11	CARBON	33K	5%	1/4W		
R758	1-249-418-11	CARBON	1.2K	5%	1/4W	F	
R759	1-247-836-11	CARBON	1.6K	5%	1/4W		
R760	1-249-421-11	CARBON	2.2K	5%	1/4W	F	
R761	1-249-423-11	CARBON	3.3K	5%	1/4W	F	
R762	1-249-426-11	CARBON	5.6K	5%	1/4W		
R763	1-247-856-00	CARBON	11K	5%	1/4W		
R764	1-249-435-11	CARBON	33K	5%	1/4W		
R765	1-249-418-11	CARBON	1.2K	5%	1/4W	F	
R766	1-247-836-11	CARBON	1.6K	5%	1/4W		
		< SWITCH >					
S751	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)					
S752	1-554-303-21	SWITCH, TACTILE (1)					
S753	1-554-303-21	SWITCH, TACTILE (2)					
S754	1-554-303-21	SWITCH, TACTILE (3)					
S755	1-554-303-21	SWITCH, TACTILE (4)					
S756	1-554-303-21	SWITCH, TACTILE (5)					
S757	1-554-303-21	SWITCH, TACTILE (EDIT)					
S758	1-554-303-21	SWITCH, TACTILE (CHECK)					
S759	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)					
S760	1-554-303-21	SWITCH, TACTILE (6)					
S761	1-554-303-21	SWITCH, TACTILE (7)					
S762	1-554-303-21	SWITCH, TACTILE (8)					
S763	1-554-303-21	SWITCH, TACTILE (9)					
S764	1-554-303-21	SWITCH, TACTILE (10)					
S765	1-554-303-21	SWITCH, TACTILE (>10)					
S766	1-554-303-21	SWITCH, TACTILE (CLEAR)					
S767	1-554-303-21	SWITCH, TACTILE (TIME)					
S768	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)					

Ref. No.	Part No.	Description					Remark
***							
*	A-4649-651-A	DISPLAY BOARD, COMPLETE					
		**********************					
		< CONNECTOR >					
CN710	1-750-237-21	CONNECTOR, FFC(LIGHT ANGLE)33P					
		< INDICATOR TUBE >					
FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT					
		< RESISTOR >					
R711	1-249-418-11	CARBON	1.2K	5%	1/4W	F	
R712	1-247-836-11	CARBON	1.6K	5%	1/4W		
R713	1-249-421-11	CARBON	2.2K	5%	1/4W	F	
R714	1-249-423-11	CARBON	3.3K	5%	1/4W	F	
R715	1-249-426-11	CARBON	5.6K	5%	1/4W		
R716	1-247-856-00	CARBON	11K	5%	1/4W		
R717	1-249-435-11	CARBON	33K	5%	1/4W		
R718	1-249-418-11	CARBON	1.2K	5%	1/4W	F	
		< SWITCH >					
S711	1-554-303-21	SWITCH, TACTILE (EX-CHANGE)					
S712	1-554-303-21	SWITCH, TACTILE (■)					
S713	1-554-303-21	SWITCH, TACTILE (❚❚)					
S714	1-554-303-21	SWITCH, TACTILE (≐)					
S715	1-554-303-21	SWITCH, TACTILE (◀◀)					
S716	1-554-303-21	SWITCH, TACTILE (▶▶)					
S717	1-554-303-21	SWITCH, TACTILE (DISC SKIP)					
S718	1-554-303-21	SWITCH, TACTILE (≐ OPEN/CLOSE)					
S719	1-554-303-21	SWITCH, TACTILE (≐)					
S720	1-554-303-21	SWITCH, TACTILE (≐)					
***							
*	1-647-544-11	HEADPHONE BOARD (C335 only)					
		***************************					
		< CAPACITOR >					
C701	1-162-290-31	CERAMIC	470PF	10%	50V		
C702	1-162-290-31	CERAMIC	470PF	10%	50V		
C703	1-164-159-11	CERAMIC	0.1uF		50V		

Ref. No.	Part No.	Description	Remark
		< JACK >	
J701	1-750-162-41	JACK (LARGE TYPE) (PHONES)	
		< RESISTOR >	
R701	1-249-402-11	CARBON 56 5% 1/4W F	
R702	1-249-402-11	CARBON 56 5% 1/4W F	
		< VARIABLE RESISTOR >	
RV701	1-223-359-11	RES, VAR, CARBON 1K/1K (PHONE LEVEL)	

****

Ref. No.	Part No.	Description	Remark
*	1-647-363-11	LOADING MOTOR BOARD *******************	

****

Ref. No.	Part No.	Description	Remark
*	A-4649-656-A	MAIN BOARD, COMPLETE (C235:US, CND) **********************************	
*	A-4649-657-A	MAIN BOARD, COMPLETE (C235:AEP, AUS) ***********************************	
*	A-4649-649-A	MAIN BOARD, COMPLETE (C335:US, CND) **********************************	
*	A-4649-654-A	MAIN BOARD, COMPLETE (C335:AEP, UK) **********************************	
*	A-4649-655-A	MAIN BOARD, COMPLETE (C335:E) *****************************	
	7-685-871-01	SCREW +BVTT 3X6 (S)	
		< CAPACITOR >	
C201	1-124-887-00	ELECT 3300uF 20% 16V	
C202	1-124-360-00	ELECT 1000uF 20% 16V	
C203	1-124-910-11	ELECT 47uF 20% 50V	
C204	1-126-163-11	ELECT 4.7uF 20% 50V	
C205	1-126-163-11	ELECT 4.7uF 20% 50V	
C206	1-124-997-11	ELECT 470uF 20% 10V	
C207	1-126-024-11	ELECT 220uF 20% 16V	
C208	1-126-059-11	ELECT 10uF 20% 50V	
C209	1-124-572-11	ELECT 100uF 20% 63V	
C210	1-161-494-00	CERAMIC 0.022uF 25V	
C401	1-126-022-11	ELECT 47uF 20% 16V	
C402	1-161-494-00	CERAMIC 0.022uF 25V	
C403	1-161-494-00	CERAMIC 0.022uF 25V	
C404	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C405	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C451	1-126-012-11	ELECT 470uF 20% 16V	
C501	1-126-012-11	ELECT 470uF 20% 16V	
C502	1-126-012-11	ELECT 470uF 20% 16V	
C503	1-124-994-11	ELECT 100uF 20% 10V	
C504	1-124-994-11	ELECT 100uF 20% 10V	
C505	1-124-997-11	ELECT 470uF 20% 10V	
C506	1-161-494-00	CERAMIC 0.022uF 25V	
C507	1-126-022-11	ELECT 47uF 20% 16V	
C508	1-126-788-91	ELECT 22uF 20% 25V	
C509	1-126-786-11	ELECT 47uF 20% 16V	
C521	1-162-282-31	CERAMIC 100PF 10% 50V	
C522	1-162-282-31	CERAMIC 100PF 10% 50V	
C523	1-130-472-00	MYLAR 0.0012uF 5% 50V	
C524	1-124-994-11	ELECT 100uF 20% 10V	
C525	1-106-359-00	MYLAR 4700PF 5% 200V	
C531	1-124-994-11	ELECT 100uF 20% 10V	
C532	1-130-467-00	MYLAR 470PF 5% 50V	
C551	1-126-024-11	ELECT 220uF 20% 16V	(C335)
C552	1-126-024-11	ELECT 220uF 20% 16V	(C335)
C571	1-162-282-31	CERAMIC 100PF 10% 50V	
C572	1-162-282-31	CERAMIC 100PF 10% 50V	
C573	1-130-472-00	MYLAR 0.0012uF 5% 50V	
C574	1-124-994-11	ELECT 100uF 20% 10V	
C575	1-106-359-00	MYLAR 4700PF 5% 200V	
C581	1-124-994-11	ELECT 100uF 20% 10V	
C582	1-130-467-00	MYLAR 470PF 5% 50V	
		< CONNECTOR >	
* CN201	1-573-047-11	PIN, CONNECTOR (PC BOARD) 2P	
CN301	1-750-236-11	CONNECTOR, FFC(LIGHT ANGLE)24P	
CN401	1-750-237-11	CONNECTOR, FFC(LIGHT ANGLE)33P	
CN402	1-750-228-11	CONNECTOR, FFC(LIGHT ANGLE)10P	
* CN403	1-695-006-11	PIN, CONNECTOR (PC BOARD) 6P	
CN404	1-750-223-11	CONNECTOR, FFC(STRAIGHT TYPE)6P	
* CN551	1-568-941-11	PIN, CONNECTOR 3P (C335)	
		< DIODE >	
D201	8-719-200-82	DIODE 11ES2	
D202	8-719-200-82	DIODE 11ES2	
D203	8-719-200-82	DIODE 11ES2	
D204	8-719-200-82	DIODE 11ES2	
D205	8-719-200-82	DIODE 11ES2	
D206	8-719-110-13	DIODE RD9.1ES-B2	
D207	8-719-200-82	DIODE 11ES2 (C235:AEP, AUS/C335:AEP, UK)	
D208	8-719-200-82	DIODE 11ES2 (C235:AEP, AUS/C335:AEP, UK)	
D451	8-719-012-99	DIODE UZ-6.2BSA-TP	
D451	8-719-109-92	DIODE RD6.2ES-B1	
D451	8-719-947-24	DIODE MTZJ-T-72-6.2A	
D501	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC201	8-759-061-65	IC LA5602	

Ref. No.	Part No.	Description	Remark
IC202	8-759-605-00	IC M5F78M07	
IC203	8-759-633-42	IC M5293L	
IC401	8-752-843-25	IC CXP82316-020Q	
IC451	8-759-172-31	IC BA6191	
IC501	8-759-061-66	IC LA9215	
IC551	8-759-634-51	IC M5218AP (C335)	
		< JACK >	
J501	1-750-679-11	JACK, PIN 2P (LINE OUT)	
		< COIL >	
L501	1-412-473-21	INDUCTOR 0uH	
L551	1-412-473-21	INDUCTOR 0uH (C335)	
L552	1-412-473-21	INDUCTOR 0uH (C335)	
L553	1-412-473-21	INDUCTOR 0uH (C335)	
		< TRANSISTOR >	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q401	8-729-900-89	TRANSISTOR DTC144ES	
Q402	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q501	8-729-900-89	TRANSISTOR DTC144ES	
Q502	8-729-900-61	TRANSISTOR DTA114ES	
Q503	8-729-900-61	TRANSISTOR DTA114ES	
Q504	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R201	1-249-429-11	CARBON 10K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-435-11	CARBON 33K 5% 1/4W	
R401	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R402	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R403	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R404	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R405	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R406	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R407	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R408	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R409	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R410	1-249-429-11	CARBON 10K 5% 1/4W	
R411	1-249-429-11	CARBON 10K 5% 1/4W	
R412	1-249-441-11	CARBON 100K 5% 1/4W	
R413	1-249-429-11	CARBON 10K 5% 1/4W	
R414	1-249-430-11	CARBON 12K 5% 1/4W	
R415	1-249-417-11	CARBON 1K 5% 1/4W	F
R421	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R422	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R424	1-249-430-11	CARBON 12K 5% 1/4W	
R426	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R451	1-247-876-11	CARBON 75K 5% 1/4W	
R452	1-247-876-11	CARBON 75K 5% 1/4W	
R453	1-247-876-11	CARBON 75K 5% 1/4W	
R454	1-247-876-11	CARBON 75K 5% 1/4W	
R456	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R457	1-247-840-00	CARBON 2.4K 5% 1/4W	F
R458	1-247-828-11	CARBON 750 5% 1/4W	F
R459	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R501	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R521	1-247-852-11	CARBON 7.5K 5% 1/4W	
R522	1-247-864-11	CARBON 24K 5% 1/4W	
R523	1-247-852-11	CARBON 7.5K 5% 1/4W	
R524	1-247-864-11	CARBON 24K 5% 1/4W	
R525	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R526	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R527	1-249-429-11	CARBON 10K 5% 1/4W	
R531	1-249-429-11	CARBON 10K 5% 1/4W	
R532	1-249-417-11	CARBON 1K 5% 1/4W	F
R551	1-249-405-11	CARBON 100 5% 1/4W	F (C335)
R552	1-249-405-11	CARBON 100 5% 1/4W	F (C335)
R571	1-247-852-11	CARBON 7.5K 5% 1/4W	
R572	1-247-864-11	CARBON 24K 5% 1/4W	
R573	1-247-852-11	CARBON 7.5K 5% 1/4W	
R574	1-247-864-11	CARBON 24K 5% 1/4W	
R575	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R576	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R577	1-249-429-11	CARBON 10K 5% 1/4W	
R581	1-249-429-11	CARBON 10K 5% 1/4W	
R582	1-249-417-11	CARBON 1K 5% 1/4W	F
		< SWITCH >	
⚠S201	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (C335:E)	
		< VIBRATOR >	
X401	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	

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*	A-4649-610-A	BD BOARD, COMPLETE	
		******************	
		< CAPACITOR >	
C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C102	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C105	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V	
C106	1-164-346-11	CERAMIC CHIP 1uF 16V	
C107	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C108	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C109	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C110	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

BD | POWER SW

Ref. No.	Part No.	Description				Remark
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C131	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C132	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C133	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C161	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C181	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C183	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V	
C184	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V	
C185	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V	
C186	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C188	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C191	1-163-091-00	CERAMIC CHIP	8PF		50V	
C192	1-163-091-00	CERAMIC CHIP	8PF		50V	
C193	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C194	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C195	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C196	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C197	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
		< CONNECTOR >				
* CN101	1-580-875-11	SOCKET, CONNECTOR (SMT) 26P				
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P				
		< IC >				
IC101	8-752-351-94	IC CXD2515Q (for KSS-240A)				
IC101	8-752-360-75	IC CXD2599Q (for KSS-390A)				
IC102	8-759-164-29	IC BA6392FP-T1				
IC103	8-752-355-45	IC CXD2565M-T6				
		< COIL >				
L101	1-414-234-21	INDUCTOR, FERRITE BEAD				
L102	1-414-234-21	INDUCTOR, FERRITE BEAD				
L103	1-414-234-21	INDUCTOR, FERRITE BEAD				
L104	1-216-001-00	METAL CHIP	10	5%	1/10W	
L105	1-216-295-00	METAL CHIP	0	5%	1/10W	
L106	1-414-234-21	INDUCTOR, FERRITE BEAD				
L107	1-414-234-21	INDUCTOR, FERRITE BEAD				
L108	1-414-234-21	INDUCTOR, FERRITE BEAD				

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R109	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R110	1-216-025-00	METAL CHIP	100	5%	1/10W	
R112	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R122	1-216-295-00	METAL CHIP	0	5%	1/10W	
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R124	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R126	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R127	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R131	1-216-037-00	METAL CHIP	330	5%	1/10W	
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W	
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R181	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R182	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R183	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R184	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R185	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R187	1-216-035-00	METAL CHIP	270	5%	1/10W	
R188	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R189	1-414-234-21	INDUCTOR, FERRITE BEAD				
		< SWITCH >				
S101	1-572-085-11	SWITCH, LEAF (LIMIT)				
		< VIBRATOR >				
X101	1-579-904-21	VIBRATOR, CRYSTAL (33.8MHz)				

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*	1-647-542-11	POWER SW BOARD				
		**************				
		< CAPACITOR >				
C731	1-161-494-00	CERAMIC	0.022uF		25V	
		< IC >				
IC731	8-741-100-48	IC SBX1610-59				
		< RESISTOR >				
R731	1-249-418-11	CARBON	1.2K	5%	1/4W	F

Ref. No.	Part No.	Description	Remark
R732	1-247-836-11	CARBON 1.6K 5% 1/4W	
R733	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R734	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R735	1-249-426-11	CARBON 5.6K 5% 1/4W	
R736	1-247-856-00	CARBON 11K 5% 1/4W	
R737	1-249-421-11	CARBON 2.2K 5% 1/4W	F

< SWITCH >

Ref. No.	Part No.	Description	Remark
S730	1-572-714-11	SWITCH, PUSH (POWER)	
S731	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S732	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S733	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S734	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S735	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S736	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S737	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S738	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S739	1-554-303-21	SWITCH, TACTILE (CONTINUE)	

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Ref. No.	Part No.	Description	Remark
*	1-647-362-11	SENSOR BOARD	

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< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN801	1-573-383-11	PIN, CONNECTOR (PC BOARD) 2P	
CN802	1-750-243-11	SOCKET, CONNECTOR 6P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D801	8-749-924-18	DIODE IC RPI-1391	
D802	8-749-924-30	DIODE PHOTO SENSOR GP2S28	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R801	1-249-416-11	CARBON 820 5% 1/4W	F
R802	1-249-406-11	CARBON 120 5% 1/4W	F

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
5	1-751-054-11	WIRE (FLAT TYPE) (10 CORE)	
8	1-751-053-11	WIRE (FLAT TYPE) (33 CORE)	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)	
64	1-569-007-11	ADAPTER, CONVERSION 2P (C335:E)	
⚠74	1-575-651-21	CORD, POWER (AEP)	
⚠74	1-590-836-11	CORD, POWER (US, CND)	
⚠74	1-696-027-11	CORD, POWER (E)	
⚠74	1-696-571-11	CORD, POWER (UK)	
⚠74	1-696-845-11	CORD, POWER (AUS)	
115	1-466-996-11	ENCODER, ROTARY	
* 122	1-648-409-11	PC BOARD, FLEXIBLE	
* 124	1-452-538-11	MAGNET	
⚠151	8-848-144-11	DEVICE, OPTICAL KSS-240A	
⚠151	8-848-281-11	DEVICE, OPTICAL KSS-390A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE) (for KSS-240A)	
152	1-647-341-11	PC BOARD, FLEXIBLE (for KSS-390A)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	
M802	A-4604-834-A	MOTOR ASSY, LOADING	
⚠T901	1-423-553-11	TRANSFORMER, POWER (US, CND)	
⚠T901	1-423-554-11	TRANSFORMER, POWER (AEP, AUS, UK)	
⚠T901	1-423-555-11	TRANSFORMER, POWER (E)	

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ACCESSORIES & PACKING MATERIALS
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Ref. No.	Part No.	Description	Remark
	1-467-123-11	REMOTE COMMANDER (RM-D335) (C335)	
	1-558-271-11	CORD, CONNECTION	
	3-756-520-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK, E)	
	3-756-520-21	MANUAL, INSTRUCTION (ENGLISH) (US, CND, AUS)	
	3-756-520-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-756-520-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	
	3-756-520-61	MANUAL, INSTRUCTION (DANISH, FINNISH, SWEDISH, ENGLISH) (AEP)	
*	4-944-110-01	CUSHION (FRONT)	
*	4-944-111-01	CUSHION (REAR)	
*	4-958-473-01	INDIVIDUAL CARTON (C235)	
*	4-958-474-01	INDIVIDUAL CARTON (C335)	
	4-959-044-01	COVER, BATTERY (for RM-D335) (C335)	

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HARDWARE LIST
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Ref. No.	Part No.	Description	Remark
#1	7-685-647-79	SCREW, TAPPING	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-134-19	SCREW +PTPWH 2.6X8 (TYPE2)	
#5	7-685-648-79	SCREW (M3X12), TAPPING	
#6	7-621-772-00	SCREW +B 2X3	
#7	7-621-255-15	SCREW +P 2X3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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